F I N A L R E P O R T

NORTH CENTRAL AIRLINES, INC.

Covering period August 27, 1963 through August 13, 1965

In accordance with its contract with the Government of the United States of America dated August 27, 1963

CONTRACT NO. AID/la-135 (Bolivia

FOR THE REHABILITATION OF

LLOYD AEREO BOLIVIANO, S. A.

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I. REVIEW OF OVER-ALL CONDITION OF LLOYD AEREO BOLIVIANO (LAB) AT THE BEGINNING OF THE CONTRACT

A. MANAGEMENT

On arrival of the North Central Team (NORTEAM) in La Paz, difficulty was encountered in establishing funds for NORTEAM local operations until local USAID officials determined that money could be provided by USAID/Bolivia instead of USAID/Washington. Urgently needed funds for the LAB rehabilitation program were not available because the Bolivian Minister of Economy was out of the city. However, these money transfers were finally completed by the NORTEAM in Cochabamba, but not in time to forestall a walkout of the workers on October 4, 1963 because the payroll was not met on schedule.

The general over-all condition of LAB on the NORTEAM's arrival in Cochabamba--where the operating headquarters, hangars, and shops are located--was very discouraging.

We can summarize our initial investigation of LAB by stating that the studies made by NORTEAM showed emphatically that there existed a complete lack of responsible management and initiative. Such lethargy of action prevailed that it induced the creation of an organization where no one was doing anything except waiting for his paycheck.

It seemed to us that almost everyone involved with LAB, directly or indirectly, contributed to LAB's critical condition: the Bolivian Government, the LAB Board of Directors, the former LAB presidents, management personnel, supervisors, the labor unions, and the workers. Each must assume his share of responsibility.

The offices of the President and the Board of Directors were located in La Paz. Management of LAB's day-to-day operations was directed by the General Manager, Mr. Rodolfo Galindo, and the General Manager-Administration, Mr. Alberto Arze. They were located in LAB's General Office in Cochabamba and were jointly responsible to the President and the Board.

Mr. Galindo administered flight operations, maintenance, communications, inspection, and airport construction. He had over 35 years' seniority with LAB and began his career as a mechanic, served as a pilot, and then went into management.

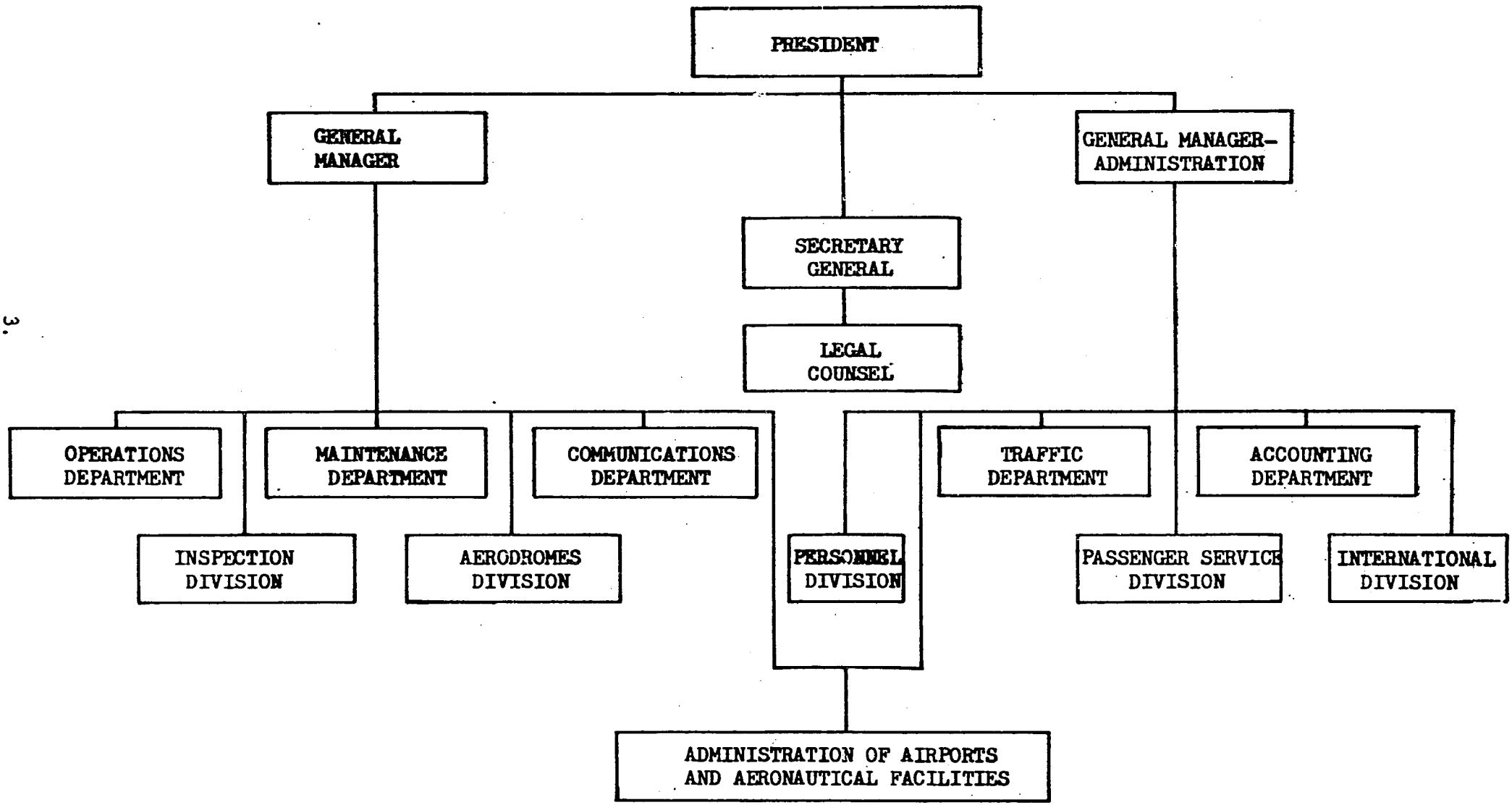
Mr. Arze had direct charge of personnel, traffic, accounting, passenger service, and international route division. He had joint responsibility with Mr. Galindo in the administration of airports and ground service. Mr. Arze had been in the employ of LAB for two and one-half years, was formerly a Minister of Economy for the Bolivian Government, and prior to that was associated with the Government Control Unit dealing with foreign exchange. He had no previous aviation experience.

The organization chart on the following page illustrates the position of the General Managers and the various department heads.

Management interviews were conducted early in our study of LAB. Interviews were held with Messrs. Arze and Galindo in an effort to learn from them the reasons for LAB's excessive losses and unfavorable reputation and what they would do if they owned the airline to improve LAB's position. Both officials agreed that among the main reasons for LAB's condition were:

1. General economic conditions (business in the country was on the decline)
2. The airline's poor safety record
3. Bad press notices as a result of accidents (Mr. Galindo made the statement that pilot errors had resulted in accidents, and he recommended thorough pilot check-out)
4. Low tariffs (need to increase passenger and cargo rates in order to increase revenues)
5. Lack of labor discipline due to abnormal political conditions (resulted in low production)
6. High gasoline cost
7. Unfavorable rate of exchange since 1952
8. Loss of some competent technicians (left for better paying jobs)
9. Lack of positive direction on part of directors and management since 1947 (Arze's opinion only)

L L O Y D A E R E O B O L I V I A N O S. A.



These interviews were held at the time of strong public comment on LAB's careless methods of flight operation and maintenance, discourteous handling of the passengers, shabby appearance of personnel and offices, and poor safety record. People were afraid to use LAB and only did so if there were no other means of transportation or for emergencies.

The lack of management responsibility naturally produced unfortunate by-products such as:

1. Decreased and poor production in maintenance, resulting in increased cost of operation
2. Complete lack of cost control
3. Purchase of used parts, materials, and aircraft at exorbitant prices
4. Delays and cancellations of flights for no apparently valid reasons
5. Inaccurate or no information for travelers or shippers concerning the operation of flights. (Employees made it as difficult as possible for the public to do business with LAB.)
6. Sloppy, unkempt appearance of personnel dealing with the public
7. No selling or promotion of any kind to increase traffic and revenue
8. Rundown condition and appearance of offices, buildings, and equipment at headquarters and stations. (Despite an excess of personnel, no one made even minor repairs to improve the appearance of facilities used by the public.)
9. Overstaffing with relatives or political appointees
10. Employee fraud and petty thievery
11. No advance planning (entire operation on a day-to-day, hand-to-mouth basis)
12. Very unfavorable public reputation, domestically and internationally, which reflected on the Bolivian Government for permitting such a condition in a Government-owned airline

13. Poor safety record and bad press notices as a result of accidents

14. Careless methods of flight operations and maintenance

15. Discourteous handling of passengers

16. Machinery, test equipment, and shop equipment in poor condition

When the NORTEAM arrived in Bolivia, LAB did not have a Traffic and Sales Department, as other air carriers do. The department from an administrative standpoint was non-existent.

There was a Superintendent of Traffic and two relief agents at Cochabamba, whose principal function was to coordinate extra sections and charter flights. All LAB station personnel reported to five or six different supervisors and, generally speaking, there was a complete lack of coordination of personnel. Flight delays were something to be expected, and no one was unduly concerned about them.

Sales promotion, public relations, and advertising programs simply did not exist. No effort was made by LAB personnel to develop traffic, either passenger or cargo.

The following examples of LAB mismanagement represent additional specific items brought to our attention during our preliminary investigation and study:

1. Excessive Commissions Paid

   a. There were some cases of what appeared to be excessive commission payments discovered during the course of our investigations, such as the one between Charlotte Aircraft Corporation in the United States and Mr. Foster Owen Williams, where invoices indicated inflated charges for parts and materials purchased to cover commissions paid.

   b. Another case was with Florida Aviation Corporation in the United States and the same Mr. Williams in the purchase of surplus engines in December 1962.

2. Pilots' Housing Project

A group of LAB pilots wanted to construct 40 homes that would be paid for by deductions from their monthly wages. LAB agreed to act as a collecting agency for some US $225,000 in notes. HORZA LTDA. was selected as a contractor by the pilot group on the project. HORZA contacted a Bolivian representative of the Horvath Trading Co. of New York for the financing of the notes. All indications pointed to another excessive commission payment. The construction of the homes soon came to a standstill due to the lack of funds as HORZA received only US $40,000 in cash and US $60,000 in construction material for the US $225,000 in notes.

Here is a case where LAB acted as an innocent collecting agency for its employees and lost approximately US $120,000 when the contractor failed to live up to its commission payment and fulfill the construction project. LAB management should have exerted its influence in guiding its employees to a financially sound organization for this construction project.

3. Excessive Employee Benefits

a. Free breakfasts and luncheons were being provided for employees that came to work early. This amounted to $43,000 in 1962.

b. Management allowed each department one day off during the year for a fiesta at company expense.

c. Supervisors were allowed to authorize employee travel at company expense to other cities for their personal benefit. This included per diem allowances.

d. A liberal policy of issuing free or discounted transportation to friends, relatives, and outsiders was also in use.

e. LAB followed a generous policy of loaning money to its employees on a long-term basis, without interest. Prior to December 1963, such loans amounted to about $25,000.

f. Little or no control existed over the distribution of automobile gasoline in company-owned vehicles, gasoline in station power generators, or aviation gasoline stocks at outlying stations.

4. Poor Cash Controls

Under the method of accounting in use, the local station agent (manager) was authorized to meet payroll and other expenses out of his station revenues. Thus, at all stations other than La Paz and Cochabamba, expenditures were paid on almost a daily basis, and LAB's credit rating was high. Revenues at La Paz and Cochabamba, however, were insufficient to meet local and foreign expenditures. Central accounting and management at Cochabamba had no control of expenditures or revenues at outlying stations. Since station reports were not filed on a regular basis, corrective or disciplinary action could not be effected in time to do any good; therefore, fraudulent acts by employees could go on for a long period of time without detection. Also, no station audits were undertaken to keep operations on an honest basis.

B. FINANCIAL

Upon arrival in Bolivia, members of the NORTEAM were faced with the situation that LAB had been losing from one-half to three-quarters of a million dollars a year for the previous seven years. Needless to say, this was a good indication that LAB was hopelessly bankrupt.

Though the company must have been bankrupt, it was impossible to determine the extent of LAB's obligations because the financial records were ten months behind. The 1962 books had just been closed when NORTEAM arrived in September 1963. Not only were the records out of date, but the method of accounting, though possibly adequate, did not lend itself to producing the financial data much needed for management.

Naturally, a company in this poor financial condition would have difficulty maintaining cash. The various LAB stations operated as separate entities. Each deposited all its receipts in the local bank and paid all expenses, including salaries, from the local account. This produced a major problem for LAB because the only funds which were readily available to meet obligations of the General Office were those collected at Cochabamba. Some of the effects of this operation were:

1. On many occasions, LAB was unable to meet the payroll when due, which resulted in walkouts and strikes.
2. LAB was unable to pay its bills for aviation fuel when due, which resulted in the supply being cut off and aircraft being grounded for lack of fuel.
3. LAB was unable to pay suppliers (U.S. and local) for parts, materials, and supplies, which resulted in all supply routes and credit being discontinued. This, in turn, caused the grounding of aircraft due to lack of parts.

Because of the lack of cash, LAB began dealing with the high-priced, low-quality type suppliers who would extend a limited amount of credit. These companies would sell surplus parts at new prices or higher and take the risk of not collecting the total invoice price. The mark-up was so great that if only 50 per cent of the invoices were collected, the supplier made a profit; and if LAB paid the amount in full, the seller would get rich. LAB was forced to deal with many suppliers of this type in order to keep even a limited number of aircraft in service.

Not only did LAB lack funds, but the company actually did not know how much was due them in accounts receivable because their records were ten months behind. It was found that the receivables were astronomical. However, some of the firms had since gone out of business, or individuals had died or were no longer in a position to pay their debts to LAB.

The method of controlling what inventory LAB had was almost non-existent. Parts were scattered all over the facilities. No one knew the quantity of parts, material, or supplies actually available in stock. Also, there was a large supply of DC-4 parts laying about, rusting. Since LAB did not have any DC-4's, they should have tried to sell these DC-4 parts to raise funds for the needed DC-3, B-17, and DC-6B parts.

Airport restaurant concessions at La Paz, Cochabamba, Santa Cruz, and Trinidad were provided by LAB to private operators free of charge. LAB did not charge any rent and received no percentage of gross sales for the use of its space, equipment, furniture, fixtures and light.

C. OPERATIONAL

During the familiarization phase of NORTEAM's tour of duty with LAB, the following operational deficiencies were observed:

1. Flight Operations

   a. Proficiency checks were overdue, and recurrent training was non-existent.

   b. Transition training was inadequate in scope and failed to efficiently utilize available flight time.

   c. DC-3 "engine-out" training was not realistic or intensive enough to properly qualify the pilots to handle such an emergency during critical phases of take-off. (LAB had experienced three fatal accidents involving engine failure during take-off in DC-3 aircraft.)

   d. Engine operating procedures deviated from manufacturers' instructions and recommendations.

   e. DC-6 operating techniques detracted from performance capabilities and imposed excessive wear and tear on components.

   f. Instrument approach procedures were variable and completely lacking in the techniques required for obtaining objective performance.

g. Enroute flying showed deficiencies in tracking, ground speed estimates, and position reporting.

h. Airplane check lists were excessively long and improperly used.

i. LAB pilots were not sufficiently trained in ILS and VOR approach procedures (especially weak in back course ILS and VOR approaches).

j. DC-3 equipment was scheduled in high altitude operation where even a minimum safety factor could not be achieved.

k. Operations manuals were out-of-date, and airport approach plates contained many errors and conflicting information.

l. As a result of LAB's low pilot wage scale, LAB's competition was siphoning off qualified personnel at a yearly average of 15%.

m. A high percentage of the point-to-point mileage, used by both Flight Operations and Traffic, was in error.

n. Aircraft manuals were out-of-date, poorly printed, and contained references to non-existent diagrams and schematics.

o. Ground school was unstaffed, and classrooms and equipment in chaotic condition.

p. Essential co-pilot flight instruments had been removed from DC-3 equipment for economy reasons.

q. DC-6 radar was improperly maintained (inoperative 75% of the time).

r. DC-3 aircraft lacked VHF communications equipment.

s. Meteorological reports from outlying stations did not contain all essential information because of lack of basic weather reporting equipment.

t. Runways at Guayaramerin, Riberalta, and Trinidad needed immediate improvement.

2. Flight Dispatch

a. Dispatching procedures were not related to the current operational problems. There had been no updating of these procedures with the use of newer aircraft.

b. Dispatchers were not given sufficient authority to make the required decisions expeditiously. Too many other employees and departments had to be consulted. Consequently, the solving of operational problems took too much time.

c. There was a tendency to avoid making decisions between the lesser of two evils or ones involving personalities. As a result of this practice, there were unnecessary delays and short delays were extended.

d. There was decided lack of appreciation for the importance of operating the flights on schedule.

e. There was a lack of current and reliable flight information for the public.

f. LAB did not have a daily operations report or summary. There was no reliable analytical report which provided reasons for delays, cancellations, re-routings, etc.

g. Instead, LAB had much unnecessary work duplication. Department heads were keeping logs on flight progress instead of working on their own department's functions. As a result, many flight dispatch employees were kept occupied transmitting this information on telephones and intercommunication circuits. This activity prevented them from performing more important flight dispatch tasks and did not permit them to plan their own work efficiently.

h. Cabin attendants were very lax in carrying out their duties. For instance, they usually ignored the no-smoking and seat belt instructions.

i. Cabin loading of cargo did not comply with generally accepted procedures designed to eliminate passenger injuries.

D. LABOR

Management at LAB's Cochabamba headquarters stated that supervisory personnel were unable to administer their responsibilities effectively because of fear of retaliatory action by the LAB labor unions. These unions circumvented management by

direct contact with the President of LAB, the Board of Directors, or the various Ministers of the Bolivian Government. Several effective and energetic administrators were forced out of LAB by this policy of going over the heads of the supervisors and management.

Obviously, when supervisors who honestly attempted to administer their responsibilities were not supported by LAB's General Managers, President, or Directors, we begin to understand some of the underlying reasons for the deterioration of LAB. When supervisors and administrative personnel are forced out of their jobs because of pressure from the workers or from the leaders of the workers, then understandably other supervisors and administrative personnel are reluctant to assume their rightful responsibility to enforce discipline and develop more production. As a result, the workers or the leaders of the workers have exercised control over management to their own ultimate economic disadvantage by interfering with and infringing on management decisions and functions.

Situations were created within LAB whereby a powerful group of employees could enforce its demands on management by securing Government support to negate management decisions; an employee did not have to put in a fair day's work; and a supervisor did not dare discipline an employee or enforce rules and procedures for fear of losing his job. Since the Bolivian Government supported the workers in their demands and petitions, it naturally followed that the Government would always be there to supply money to offset the losses. Consequently, there was little need for initiative, aggressive development, or long-range planning by LAB. Therefore, the disease of inactivity spread like a cancer through the entire organization--workers supervisors, and management--and the deterioration of LAB resulted.

E. FACILITIES AND MAINTENANCE

1. Facilities

The preliminary inspection of the Maintenance and Engineering Department indicated that all facets of the department were in a state of extreme

deterioration. Despite an excess of personnel, a lack of housekeeping was evident throughout the system.

The grounds around the offices, hangar, and shops were overgrown with weeds; hedges were untrimmed. All buildings needed painting and there were over 200 broken window panes that needed replacement. The sidewalks, shop floors, and hangar floors needed repair or replacement. The terminal building was filthy, large sections of the passenger area floor had holes in it, windows were broken, and counters poorly painted and in an unclean condition. In fact, no matter where you looked, all LAB facilities had the appearance of neglected housekeeping, and the lack of good maintenance procedures was evident.

2. Maintenance

Five aircraft were out of service for lack of engines or waiting for overhaul on the NORTEAM's arrival. The aircraft had at least half a dozen different paint designs and colors.

Instead of overhauling the R-1820 and R-1830 engines, LAB's practice was to buy surplus engines from the United States. Very little effort was made to overhaul LAB's own engines, although the overhaul shops had enough equipment and qualified manpower to perform the work. (All they lacked was spare parts for overhaul.)

One of the glaring inefficiencies in the entire operation was the work schedule of the maintenance force at Cochabamba. Mechanical workers were on duty from 1 p.m. to 8 p.m. while the supervisors worked a day shift from 8 a.m. to 6 p.m., with two hours off for lunch.

Therefore, the supervisors had virtually no workers to supervise for most of the day, and the workers had no supervision for part of the day. Although LAB management agreed that production would increase with a change in the work schedule to provide for more supervision, it was afraid to make the move because of the union's objections.

On investigation, we found that nearly everyone worked for other companies in the mornings, and consequently were tired when they arrived to work for LAB at 1 p.m. As a result, production was very poor.

The morale of the Maintenance Department employees (both supervisors and mechanics) was very low due to the strong control the union leaders held over the entire airline, but especially over Maintenance, as nearly all union officials and the most radical element were in this department. In some instances, this amounted to actual fear of the results which might occur to them personally, if they incurred the anger of union leaders. We found that about 95% of the employees wanted to do what was right and were talented in their field of employment, but they could not take the risk of being branded as "an enemy to our society" and lose their jobs.

Due to the large number of employees on the payroll and the lack of work schedules, a practice of "making work for everyone" was found. For instance:

1. Washing the aircraft with quart cans of water instead of hoses.
2. A separate inspection time was scheduled for each engine and for the airframe. The two-engine aircraft required three separate visits to the maintenance base to accomplish the necessary checks. A four-engine aircraft required five visits. Consequently, the aircraft were in the maintenance shops most of the time, and LAB had to make many unnecessary ferry flights from outlying stations, increasing operational costs and keeping aircraft out of service due to their running out of time.
3. Failure to use impact and speed wrenches that would have speeded up the disassembly or assembly of engines or components.
4. Poor productivity in shops due to lack of production quotas. (Example, the instrument shop was overhauling instruments at the rate of only one instrument per man every two weeks).

Manuals, overhaul specification sheets, and procedures were of the vintage of 1946-48 and very out-dated. Parts that had been superseded many times were still being used due to this lack of information.

The failure rate of the R-1830 and R-1820 engines' main bearings was high due to improper operating techniques by the flight crews and the use of poorly reconditioned main bearings.

Mechanical delays were very high, and no attempt was made to operate flights on schedule. There was no supervisory coverage of the Maintenance Department over the week-ends or holidays, which caused many problems and cancellations of flights.

Two-hour union meetings were held on company time once a month. The football team practiced on company time for 45 minutes twice a week.

II. NORTH CENTRAL AIRLINES' PROGRAM FOR THE REVITALIZATION AND DEVELOPMENT OF LAB

On November 9, 1963, Mr. H. N. Carr, President of North Central Airlines, Inc., arrived in Bolivia. Mr. Carr, who is an Organization and Management Specialist, reviewed NORTEAM's initial investigation and study of LAB. During his stay, he developed and outlined the following overall program for the revitalization and development of LAB.

NORTH CENTRAL AIRLINES' PROGRAM

North Central's general objective in this project is to develop LAB into a safe, reliable, self-supporting airline operation which will provide the maximum public transportation benefits, both domestic and international, to Bolivia. It is planned that this objective will be accomplished during the next two years by performing the following activities in LAB's operation:

1. General

   a. Reorganize LAB into four operating departments--Flight Operations, Maintenance and Engineering, Traffic and Sales, Finance and Accounting.

      (1) Each department will be supervised by a manager selected from the best personnel available in LAB or outside the company.

      (2) All four department managers will report to a Vice President and General Manager (new position) who is responsible only to the President of LAB.

   b. Gradually expand LAB's domestic and international service.

      (1) Add three to six DC-6B's initially, with a limited number of prop-jet aircraft (e.g. Lockheed Electra) to be acquired later for international routes.

      (2) Inaugurate new international routes to Brazil, Colombia, Venezuela, and the United States.

   c. Restore public confidence in LAB by improving the airline's schedule completion, on-time performance, and safety record.

   d. Develop a favorable corporate image for LAB.

      (1) Relocate LAB's General Office from present quarters to Training Building

      (2) Clean and restore all physical property and equipment at General

(3) Improve the appearance and uniforms of LAB personnel (pilots, stewardesses, and agents).

e. Eliminate completely all forms of fraud, commissions, rebates, discounts, pilferage, and thievery in purchase of supplies and equipment, ticket sales, station operation, and maintenance.

f. Recover, to extent possible, all money due LAB from outstanding accounts receivable and make settlements where LAB has been defrauded (e.g. Lima ticket sales, pilots' housing project).

g. Reduce LAB's fuel costs and obtain additional revenue by acquiring and operating the Y.P.F.B. aviation gas and oil facilities or by importing gas and oil independent of Y.P.F.B.

h. Secure the return of 20% LAB common stock now owned by Panagra. This stock interest in LAB then to be cancelled or held by the Bolivian Government.

i. Obtain additional working capital funds from the Bolivian Government, a grant-in-aid to Bolivia from the United States, or a World Bank Loan.

2. Flight Operations

a. Revise and perfect flight operations procedures to permit maximum safety and efficiency (e.g. present approach procedures cause excess reciprocating loads on master rod bearings resulting in 35 failures in 20 months).

b. Correct and bring up-to-date flight operations manuals (i.e. airplane manual, operations manual) and add Jeppesen service for approach charts.

c. Improve proficiency of pilots.

(1) Develop continuing flight training and flight check program for all pilots.

(2) Check out and up-grade additional captains.

(3) Raise standards for new pilots hired (e.g. flight hours, age, commercial license).

(4) Revise pilots' wage scale upward to attract and retain better qualified personnel.

d. Develop program to improve runways at all airports as required by type of aircraft by which they are served (e.g. Trinidad, Riberalta, and Guayaramerin).

e. Develop program to install navigational facilities (i.e. VOR ranges) at all airports where operationally practicable. VHF communications equipment to be installed at all airports.

f. Equip all aircraft with essential flight instruments.

(1) Reinstall gyro compass, directional gyro, and other instruments to co-pilot's panel.

(2) Install VHF on all aircraft and standardize all radio equipment.

g. Establish procedures to enable LAB to take over and operate the Bolivian air traffic control system.

3. Maintenance and Engineering

a. Expand and improve LAB's physical maintenance plant.

(1) Enclose entire maintenance area with 7' cyclone-type fence.

(2) Construct second story around main hangar to house instrument shop, maintenance and inspection offices.

(3) Enlarge and pave ramp area in front of main hangar and nose hangar.

(4) Resurface main hangar floor.

(5) Consolidate stock rooms and move to area adjacent to ground floor of maintenance hangar.

(6) Improve housekeeping and appearance of all maintenance and overhaul shop areas.

b. Modernize and improve LAB's overhaul facilities.

(1) Acquire modern maintenance tools and equipment essential to an

efficient operation (e.g. the engine test stand is over 30 years old; much shop equipment is obsolete or inoperative).

(2) Instrument overhaul--relocate instrument shop in dust-free, air conditioned space.

c. Improve LAB's overhaul procedures and establish overhaul specifications.

(1) Engine overhaul--bring up production of overhauled engines to minimum of two a week by up-dating procedures, establish current file, eliminate use of obsolete and bogus parts, obtain equipment necessary to expedite time (e.g. speed wrenches, impact tools).

(2) Propeller overhaul--obtain equipment necessary to eliminate present hand method of overhaul.

(3) Improve techniques for overhaul of all other parts (e.g. carburetors).

d. Establish maintenance production planning unit.

e. Improve procedure for line maintenance trouble-shooting.

f. Strengthen and equip engineering unit (e.g. most of time now spent translating manuals).

g. Overhaul and modernize ground equipment and motor vehicles (e.g. one ground power unit now inoperative more than a year because of broken shaft; one passenger bus now inoperative for two years because no replacement motor available.

h. Develop continuing maintenance training program.

(1) Set up refresher classes for mechanics and supervisors (i.e. no program exists now for training mechanics).

(2) Revise and up-date all maintenance manuals (e.g. now three to eight years obsolete).

i. Increase efficiency of maintenance and overhaul crews by changing working hours from present basis (i.e. 1 p.m. to 8 p.m.) to 8 a.m. to 6 p.m.

4. Traffic and Sales

a. Expand and strengthen organization and supervision of traffic and sales functions (e.g. no activities now conducted in areas of advertising, sales, public relations, and promotion).

(1) Establish advertising budget allowance of approximately 2¢ per plane mile.

(2) Establish trade agreements with radio stations and newspapers.

(3) Appoint public relations representatives at major points (e.g. Lima, Buenos Aires, Sao Paulo, Santa Cruz).

(4) Develop, publish, and distribute a public timetable showing all schedules, tariffs, and route map.

b. Develop traffic and station manuals (e.g. this material now consists only of a collection of bulletins which do not anticipate operating problems).

c. Improve station operating procedures and paper work in accordance with new station manual.

d. Improve appearance of all stations and ticket offices (i.e. passenger lobbies, ticket counters).

e. Improve passenger handling and reservations techniques in accordance with new traffic manual.

f. Develop traffic statistics and analysis program.

(1) Monthly reports on passengers and cargo by stations.

(2) Monthly reports on passenger and cargo revenue by segments.

(3) Monthly summary of plane miles and hours by type of aircraft.

g. Improve and expand scheduling.

(1) Increase service on high-density domestic and international segments.

(2) Provide minimum of one round-trip daily to all cities served.

(3) Realign route structure to achieve more effective scheduling and aircraft routing.

(4) Restrict DC-3 operation to lower altitude routes and DC-6B service to higher altitude routes.

h. Modify tariffs to raise average yield per passenger mile (e.g. yield now averages only 4.2¢).

(1) Eliminate all illegal discounts. Require government transportation request for government discount.

(2) Raise passenger and cargo tariffs on high-density segments.

(3) On international segments raise passenger fares to 90% of IATA tariff. Apply surcharge on excess baggage over 100 pounds.

(4) Institute promotional fares on appropriate routes (e.g. La Paz, Santa Cruz, Cochabamba).

5. Finance and Accounting

a. Overcome current financial crisis by obtaining funds from outstanding accounts receivable, U.S.AID, and Bolivian Government.

b. Obtain major loan from U.S.AID for aircraft, ground support equipment, and spare parts (i.e. $4,000,000).

c. Establish effective accounting system and procedures.

(1) Bring financial statements up-to-date and maintain on monthly basis (e.g. statements were six to eight months behind).

(2) Provide regular financial reports to management (e.g. daily cash report, monthly cost analysis, general statistics).

d. Centralize all payments through General Office accounting department.

e. Establish system of station audits.

(1) Audit all stations every 60 days.

(2) Audit gas usage by means of pilot checks.

f. Maintain control of ticket stock (i.e. single ticket inventory, kept under lock and key).

g. Establish freight manifest control.

h. Contract with non-scheduled carriers for services performed and bill monthly (e.g. landing fees, space rental, gas and oil, ramp service, traffic control).

i. Rebid contracts for terminal concessions.

j. Analyze and reorganize system of fringe benefits for employees.

(1) Revise system of free transportation to employees to restrict use of taxis, cars, and free gas.

(2) Modify medical social benefits (e.g. 20 part-time doctors and pharmacists in Cochabamba to be replaced by two full-time persons).

(3) Control and limit free-meal conditions (i.e. provide only to employees working through meal period or away from home base and reimburse employee).

k. Improve payroll control.

(1) Check persons reporting for work against payroll list.

(2) Equalize and justify confidential payroll.

l. Increase utilization of personnel.

(1) After analysis, institute transfers and terminations (e.g. 28 guards) and pay social benefits.

(2) Terminate dishonest employees.

m. Award insurance contracts on bid basis.

n. Establish effective stock control system.

(1) List items in stock with no usage in three years or surplus to present requirements.

(2) Segregate surplus items from active stock, assign valuation, and circulate sales lists.

(3) Prepare complete physical inventory of active items and assign value.

(4) Realign stock by type of equipment in part number sequence.

(5) Separate rotable spares from expendable stock. Establish rotable program, including determination of shelf-time limits.

(6) Call in all rotable items in shops and establish stock control.

o. Establish effective procurement system.

(1) Replace NCR machine with Kardex stock control.

(2) Establish minimum-maximum stock levels on all control cards.

(3) Advise and train buyers in methods of planned purchasing (with emphasis on calculation of lead times and minimum-maximum stock levels) and in direct source purchasing.

(4) Transfer invoice audit to accounting section.

(5) Discontinue superfluous ledgers.

(6) Establish daily Purchase Commitments Report.

p. Prepare a complete Purchasing and Stores Manual covering procedures, methods, and forms.

II. ACCOMPLISHMENTS BY THE NORTH CENTRAL TEAM

A. MANAGEMENT-ADMINISTRATION

1. Reorganization Plan for LAB

When NORTEAM arrived in Bolivia, LAB was found to have ten departments with two general managers in charge. NORTEAM's proposed reorganization would change LAB to a company with four operating departments and one General Manager.

Organization and functional charts, as well as job descriptions for all personnel, were completed for all departments. (See Exhibit I). Although the plan was approved by LAB's President and Board of Directors, it was never implemented by the General Manager in its entirety. Also, he failed to reorganize the Traffic and Sales Department, although many man-hours were expended in training personnel for the new jobs to coincide with the organization plan.

2. Implementation of Five Point Program

In the course of many discussions and meetings with various Bolivian Government Ministers, matters that were not within the jurisdiction of the NORTEAM were presented to these officials and changes relating to them that were vital to the rehabilitation of LAB were requested. However, these individuals were very reluctant to upset the status quo because they did not want to jeopardize their own political positions with other Government officials or with the labor leaders of the unions.

Still seeking a solution to these problems, NORTEAM made a list of them and presented it to USAID/Bolivia requesting their support. This list became known as the "Five Point Program", and it was presented to the Bolivian Government by the United States Ambassador to Bolivia, the Honorable Douglas Henderson, and action on it was assured. The following is a summary of the "Five Point Program" and the status of each point.

Point One - System tariff increases: Completed

Point Two - Reduction in avgas price: Completed

Point Three - Transfer of aircraft and parts from State enterprises to LAB

Four aircraft (two C-47's and two B-17's) and parts have been received by LAB from CBF. All aircraft have been reconditioned, painted, relicensed and are in operation on LAB's system. The aircraft from COMIBOL and YPFB have not yet been transferred to LAB.

Point Four - Reduction of personnel

This program is being continued by LAB management. In June 1965, 11 former union leaders were separated, making a total reduction of 75 employees since January 1, 1965 for a savings of $8,000 a month. LAB management is preparing a loan application to USAID/Bolivia to finance the discharge of all LAB employees under the present contract with the unions and the paying of all social benefits. Also included in the loan application would be the rehire of those employees needed for an economical airline operation, under a new contract which would eliminate all bonuses, benefits not covered by law, and other fringe benefits that have crept in under pressure from the Sindicatos. This plan would save LAB approximately $43,000 a month and reduce personnel by about 100 and still give the employees hired back an increase in wages.

Point Five - Regulation of scheduled and non-scheduled competition to LAB and the elimination of TAM as a civil competitor on LAB's routes: No progress

3. Restoring of Public Confidence in LAB

Public confidence was restored in LAB by NORTEAM's insisting that LAB adhere to on-time scheduled operation, make improvements in the airline's safety record, maintain reliable, clean airplanes, and that flight crews use generally accepted procedures in the operation of the aircraft.

A more favorable corporate image for LAB was also developed by the NORTEAM. This included a new paint job for all aircraft and ground equipment, with a standardized insignia; the repairing and painting of ticket offices; outfitting the ticket agents, flight crews, stewardesses and line mechanics in in new uniforms; insisting on personal cleanliness and courtesy in handling the traveling public; the distribution of attractive public timetables; and the design of new stationery and all other forms that are seen by the public.

4. Flight Equipment Program

A joint committee of LAB managers and NORTEAM members was set up to make an evaluation study of turbine-powered aircraft that could be used in LAB's operation.

Captain Rodolfo Galindo, LAB's Technical Assistant to the President, was named Chairman, with North Central's Flight Operations Specialist, Captain Arthur Hinke as Vice Chairman. After several meetings of the Committee, Capt. Galindo went on vacation. His return was extended four or five times until six months went by.

At this point, it was necessary for Capt. Hinke to take charge and, after many delays caused by the LAB committee members, the study was finally completed. Upon presentation to USAID/Bolivia, it was accepted with much interest. Later, the study was translated into Spanish and presented to LAB Management. As of this report, no action has been taken on the Aircraft Evaluation Study. (See Exhibit II).

5. Route Development Program and Market Survey

During the early months of the contract period, experimentation was made with flight schedule improvements. The following is an analysis of the major schedule increases that were made in 1964, compared with LAB's September 1963 service:

a. Increased DC-6B weekly round trips

La Paz-Cochabamba - 11 to 15

Cochabamba-Santa Cruz - 5 to 10

Cochabamba to Trinidad-Riberalta-Guayaramerin - 2 (new service)

La Paz-Trinidad - 2 (new service)

Cochabamba-Tarija-Yacuiba - 2 (new service)

b. Increased DC-3 weekly round trips

Santa Cruz-San Borja-Asuncion - 1 to 4

Santa Cruz-Trinidad - 2 to 4

Santa Cruz-Puerto Suarez, via intermediates - 1 to 4

c. Increased B-17 weekly round trips

La Paz-Apolo-Rurrenabaque - 2 (new service) mixed configuration: passenger/cargo

Cochabamba-Trinidad-Riberalta-Guayaramerin - 2 (new service) mixed configuration: passenger/cargo

Two new cities were added to the LAB system during the contract period. They were Sao Paulo, Brazil (February 1964) and San Ramon, Bolivia (June 1964).

Other suggested route improvements are covered in the Market Study attached to this report as Exhibit III.

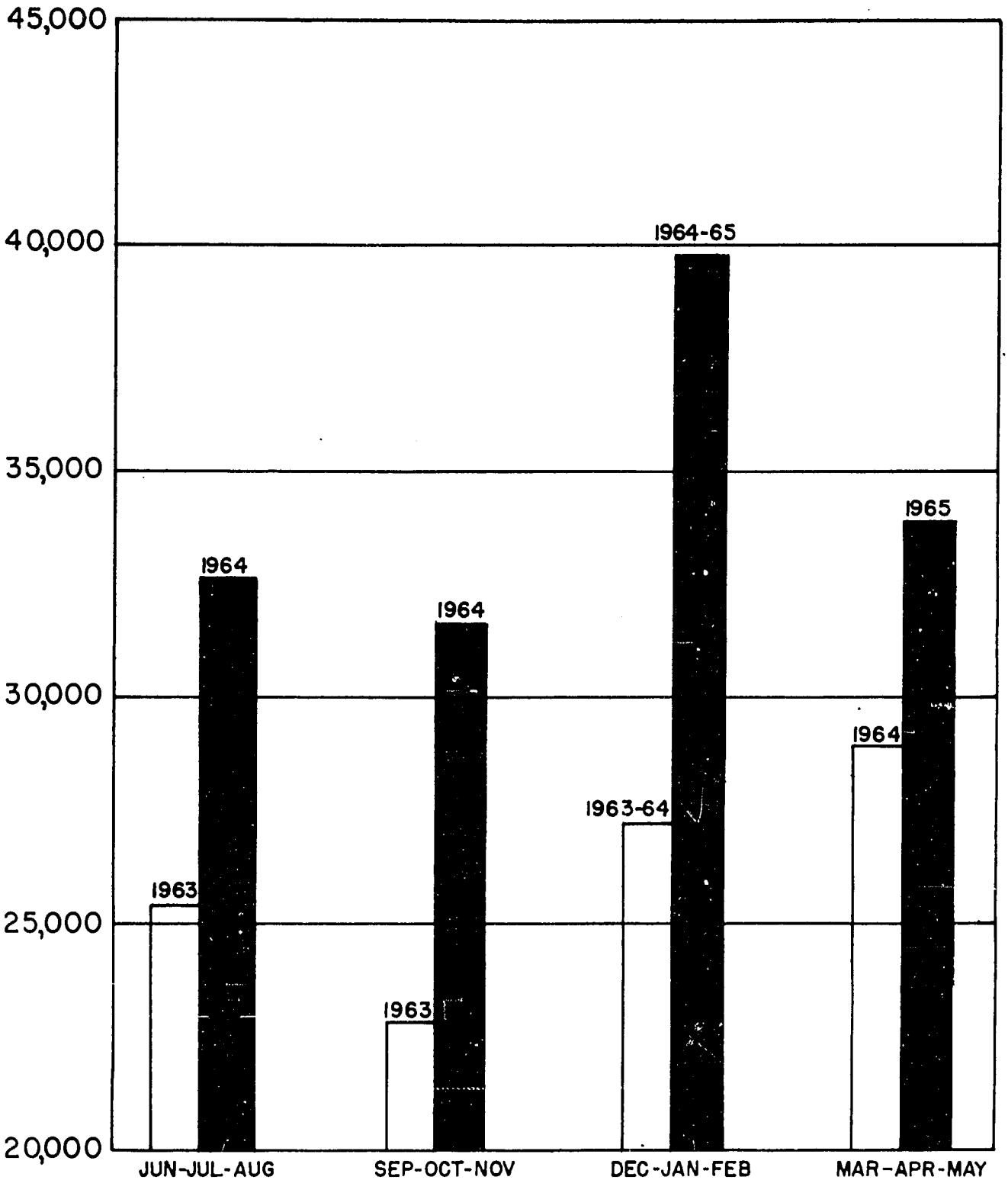
These changes in the service pattern resulted in substantial increases in revenue passengers. The following charts compare LAB traffic and revenues for the last four quarters (June 1, 1964 through May 31, 1965) with the corresponding quarters in the years before (June 1, 1963 through May 31, 1964). This is the most recent period for which traffic and revenue figures were available to NORTEAM members.

LLOYD AEREO BOLIVIANO

REVENUE PASSENGERS

(BY QUARTERS)

1963 - 1965



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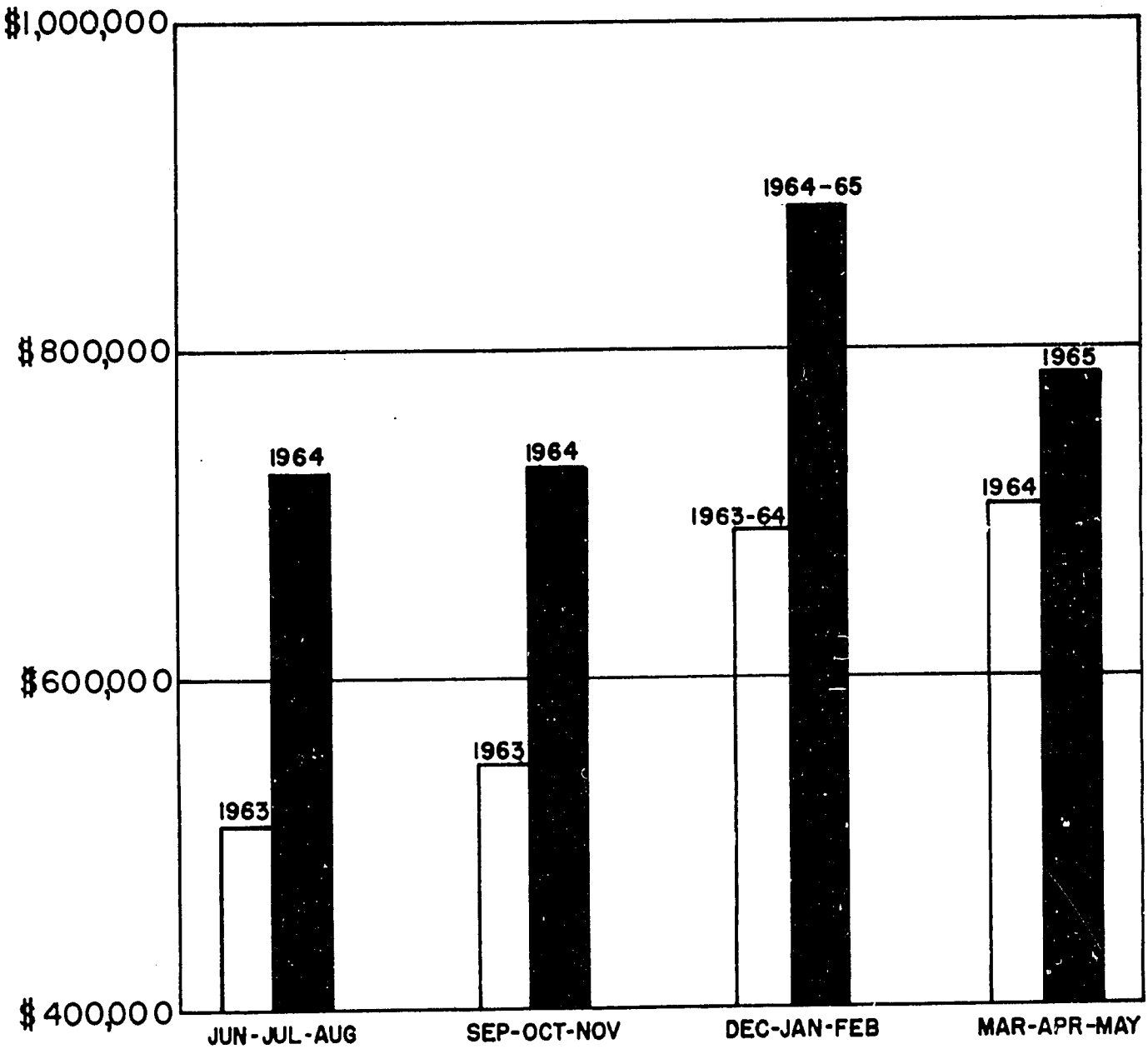
TOTAL REVENUES

(BY QUARTERS)

1963-1965



6. Tangible Accomplishments Effected by NORTEAM

The following summary and detail supports the tangible savings (increased revenues and reduced costs) that were effected by NORTEAM members as a result of their efforts in the rehabilitation program of LAB.

SUMMARY	Estimated Annual Reductions in Costs or Increases in Revenues	
a. MANAGEMENT AND ADMINISTRATION		
(1) Aviation Gasoline Price Reduction		$ 300,000
b. FINANCE AND ACCOUNTING DEPARTMENT		
Accounting Section		
(1) Savings in Annual Insurance Premiums	$40,000	
Purchasing and Stores Section		
(1) Savings in Parts and Supplies Purchases	54,000	
(2) Savings in Drug Purchases	26,000	
Total		120,000
c. TRAFFIC AND SALES DEPARTMENT		
(1) Stabilization of Average Passenger Yields	$100,000	
(2) Passenger Tariff Increases	120,000	
(3) Additional Revenues Generated by Commercial Development Section	15,000	
Total		235,000
d. FLIGHT OPERATIONS DEPARTMENT		
(1) Decrease in Fuel Consumption	$ 6,000	
(2) Increase in Tire and Brake Life	10,000	
Total		16,000
e. MAINTENANCE AND ENGINEERING DEPARTMENT		
(1) Savings in routine engine oil changes	$ 9,000	
(2) Increase in DC-3 major airframe overhaul time	5,000	
(3) Increase in DC-6B airframe overhaul time	11,000	
(4) Reduction in R-1830-92 engine failures in 1964 vs 1963, increase in time between overhaul on these engines, and LAB performing its own overhaul (instead of purchasing newly overhauled engines)	105,000	
(5) Savings resulting in 1964 from overhaul of R-1820-97 engines in LAB shops (instead of purchasing newly overhauled engines)	86,000	
(6) Increase in time between overhaul of R-2800 engines and repair or top overhaul of these engines	61,000	
Total		277,000
Total all departments		$948,000

DETAIL

a. MANAGEMENT AND ADMINISTRATION

(1) Aviation Gasoline Price Reduction ..... $ 300,000

As a result of gasoline price reductions received during 1964, the savings to LAB in aviation gasoline expenses for 1965 should be $300,000. This is based on prices existing prior to these reductions and the anticipated volume to be used in 1965. These reductions were obtained from the Bolivian Government's gasoline monopoly, YPFB, through the efforts of NORTEAM, with the assistance of USAID/Bolivia.

b. FINANCE AND ACCOUNTING DEPARTMENT

Accounting Section

(1) Savings in Annual Insurance Premiums ..... $ 40,000

A contract for insurance was let in June 1964 by which we were able to reduce the insurance premiums by $40,000 per year.

Purchasing and Stores Section

(1) Savings in Parts and Supplies Purchases ..... $ 54,000

Items were selected at random from Casco invoices to determine the invoice cost and then checked against purchases made since the arrival of the NORTEAM.

The majority of the items reflect a substantial decrease in the cost price, while a few are higher than before. This can be expected in some items purchased from the surplus market because the price will fluctuate with market availability. Another factor to consider is quality. The substantially improved performance of LAB's engines will attest to the quality of parts that have been purchased by LAB during the first 15 months since NORTEAM's arrival.

The items checked are as follows:

Quantity	Part Number	Casco Price	New Price
100 ea	1314	6.00 ea	4.93 ea
6 ea	119049-501B	2.10 ea	3.75 ea

Quantity	Part Number	Casco Price	New Price
100 ea	AN6227B-12	.15 ea	.08 ea
1 ea	2115849	21.00 ea	15.00 ea
1 ea	2133383	4.75 ea	5.21 ea
2 ea	4115638-1	12.00 ea	9.00 ea
24 ea	3320497	11.45 ea	10.32 ea
4 ea	5337942-190	105.00 ea	92.73 ea
4 ea	5337943-178	38.00 ea	39.00 ea
4 ea	5337943-180	89.00 ea	78.00 ea
20 ea	113114	175.00 ea	185.00 ea
24 ea	890112-18	6.85 ea	3.32 ea
1 ea	582-1A	27.50 ea	26.40 ea
30 ea	59145	75.00 ea	54.80 ea
1 ea	11-3365-1	1,400.00 ea	850.00 ea
40 ea	32818C	25.00 ea	15.50 ea
6 ea	34222	8.40 ea	3.60 ea
6 ea	35024	144.00 ea	125.00 ea
6 ea	36445	60.00 ea	52.67 ea
3 ea	36759	450.00 ea	350.00 ea
2 ea	41673	25.00 ea	11.58 ea
2 ea	18389	18.00 ea	8.90 ea
500 ea	31406	1.20 ea	.50 ea
8 ea	51894B	20.00 ea	12.48 ea
20 ea	100448	35.00 ea	19.50 ea
8 ea	24966	175.00 ea	95.00 ea
6 ea	24169	20.00 ea	5.50 ea
31 ea	24919B	30.00 ea	12.00 ea
15 ea	272903	90.00 ea	15.00 ea
70 ea	198220-10	60.00 ea	49.50 ea
6 ea	31815	42.00 ea	34.50 ea
3 ea	50668	4.92 ea	.50 ea
15 ea	52204	2.75 ea	.75 ea
25 ea	53905	2.28 ea	.84 ea
15 ea	53907	.35 ea	.18 ea
50 ea	53917	.12 ea	.03 ea
10 ea	55774	18.30 ea	5.00 ea
10 ea	55149	.09 ea	.05 ea

Quantity	Part Number	Casco Price	New Price
30 ea	56053	.10 ea	.06 ea
30 ea	55172	3.30 ea	.50 ea
2 ea	65188	8.32 ea	5.00 ea
10 ea	M600-43	12.00 ea	3.95 ea
10 shts	025 Alum	16.06 sheet	13.76 sheet
10 shts	032 Alum	19.43 sheet	15.98 sheet
10 shts	040 Alum	22.19 sheet	18.63 sheet
6 shts	051 Alum	31.28 sheet	23.57 sheet
6 shts	064 Alum	35.82 sheet	26.60 sheet
300 ea	AN3-4	2.75/c	2.12/c
300 ea	AN-3-5	2.75/c	2.40/c
100 ea	AN3-14A	2.90/c	2.37/c
100 ea	AN23-11A	3.95/c	3.20/c
100 ea	AN210-3B	1.80 ea	.84 ea
6 ea	51023	14.00 ea	9.75 ea
100 ea	REB3N	1.00 ea	.88 ea
3 ea	34378	238.00 ea	167.50 ea
4 ea	59284	577.82 ea	900.00 ea
2 ea	259115	1,695.00 ea	1,200.00 ea
7 ea	404474	801.08 ea	712.00 ea
Total extended cost		$36,181	$29,227

/c = Per Hundred

Savings in cost of items $6,954
(Compared to Casco prices)

Per Cent Reduction in Cost . . . 19.2%

Total purchases made in the first 15 months since the arrival of NORTEAM was $282,986

(Excluding existing contracts with American Airlines and the overhaul of engines)

Cost saving at 19.2% reduction for 15 months 67,244

Cost saving for 12 months 54,000

(2) Savings in Drug Purchases $26,000

A program of drug purchases for employees was recently adopted that will reduce the total cost of drugs by a minimum of 55%. The average cost per month from local pharmacies was approximately $4,000. With the reduction in cost, there will be a net annual savings of $26,400.

c. TRAFFIC AND SALES DEPARTMENT

(1) Stabilization of Average Passenger Yields $100,000

By elimination of all illegal passenger fare discounts, the average passenger fare yields would be raised from $.0440 for 1963 to $.0465 in 1964. Based on an average seat miles sold base of 40,000,000, the increase in future revenues obtained by exercising good management control amounts to $100,000.

(2) Passenger Tariff Increases $120,000

Development of a new passenger tariff effective November 2, 1964 will increase annual revenues by approximately $120,000.

(3) Additional Revenues Generated by Commercial Development Section $15,000

Instituted a program for development of commercial sales headed by a representative with airline training. Some $15,000 in extra revenues from local manufacturers was generated in 1964. Continuation of this sales effort should produce even greater revenues in 1965.

d. FLIGHT OPERATIONS DEPARTMENT

(1) Decrease in Fuel Consumption $6,000

A decrease in DC-6B fuel consumption was effected through standardized leaning procedures. (Estimated savings of $500 per month or $6,000 a year)

(2) Increase in Tire and Brake Life $10,000

Increased tire and brake life through implementation of better landing techniques which have reduced average touch-down speeds. (Estimated $800 savings per month or $9,600 a year)

e. MAINTENANCE AND ENGINEERING DEPARTMENT

(1) Savings in Routine Engine Oil Changes.....$9,000

Discontinuance of LAB policy of routine engine oil changes every 400 hours of engine operation in all aircraft engines. Based on 6,258 gallons of oil at $1.45 a gallon, annual savings would be $9,000.

(2) Increase in DC-3 Major Airframe Overhaul Time.....$5,000

Increase in DC-3 major airframe overhaul time from 8,000 hours to 12,000 hours. Cost per hour was reduced from $2.50 to $1.67. This savings of $.83 an hour multiplied by 6,300 hours results in annual savings of $5,000.

(3) Increase in DC-6B Airframe Overhaul Time.....$11,000

Increase in the DC-6B airframe overhaul time on CP-740 from 3,250 hours to 4,000 hours, assuming a cost of $60,000 to perform the 4,000-hour overhaul, would save 750 hours' time at $15 an hour, or an annual savings of $11,000.

(4) Reduction in R-1830-92 Engine Failures in 1964 vs 1963, Increase in Time Between Overhaul on these Engines, and LAB Performing its Own Overhaul (Instead of purchasing newly overhauled engines)....$105,000

Procedural changes and the use of updated parts in R-1830-92 engine overhaul has decreased engine failures from 25 in 1963 to 10 during 1964. Comparing the cost of overhauling 25 engines in 1963 with 10 in 1964, we realize a cash savings on 15 overhauls at $2,228 each, or a total cash savings of $33,420.

During the year 1963 LAB purchased six 1830-92 engines at $5,950 each (CASCO invoices) for a cost of $35,700, plus an average transportation cost of $750 each or $4,500, making the total cost $40,200. During 1964 LAB was not permitted to purchase any R-1830 engines from the United States. The average overhaul cost of the R-1830-92 engine in LAB's shops was $2,228, including materials and labor. LAB overhauled 20 R-1830 engines

in their shops, for a total cost of $44,560. If they had continued to purchase engines (20) in the U. S. as before, it would have cost $134,000. So in reality, the procedure was a cash savings to LAB of $89,440.

R-1830-92 engine overhaul time has been increased from 850 hours to 1,000 hours, with the approval of D.G.A.C. This change, together with other improvements in flight operation and maintenance procedures, increased the average hours per engine change from 602 hours in 1963, to 779 hours in 1964. The net result of this, and the reduction in costs indicated in Items 4 and 5 above, should result in a net savings of $8.30 per engine hour. Based on 12,607 engine hours flown in 1964, annual savings would be $105,000.

(5) Savings Resulting in 1964 from Overhaul of R-1820-97 Engines in LAB Shops (Instead of purchasing newly overhauled engines).....$86,000

Also, during 1963 LAB purchased seven R-1820-97 engines at $5,575 each for $39,025, with transportation charges of $750 per engine (or an additional $4,900), the total cost was $43,925. Again during 1964, LAB was not permitted to purchase any R-1820 engines from the U. S. In 1964, LAB overhauled 20 R-1820-97 engines in their own shops for a total cost of $22,580 ($1,129 per engine). Compared with the cost of 20 engines at $111,500 (if they had continued to purchase them from the U. S. at $5,575 each) plus an additional transportation charge of $15,000 or a total of $126,500, we again realized a cash savings to LAB of $103,920. The reduction in the cost per hour was $11.62. Based on 7,371 engine hours in 1964, annual savings would be $86,000.

(6) Increase in Time Between Overhaul of R-2800 Engines and Repair of Top-Overhaul of these Engines.....$61,000

It is difficult to put a dollars and cents value on the improved overhaul procedures on the R-2800 engines. In 1964 the LAB shops were

able to repair or top-overhaul 13 of the R-2800 engines. In fact, four of these engines are still in service and have accumulated 3,210 hours since repair. R-2800 engine overhaul time was increased from 1,500 hours to 1,800 hours with approval of D.G.A.C. This change, along with other improved operating procedures, allowed the average engine life between overhauls to increase in 1964 to 1,272 hours from 1,028 in 1963. The total overhaul cost of an R-2800 engine averages about $18,000. (Some have cost LAB as much as $24,000). Therefore, the cost per engine hour was reduced by $3.36. Based on the 18,166 engine hours (R-2800) flown in 1964 this results in annual savings of $61,000.

The total estimated annual reductions in costs or increases in revenues amount to $948,000.

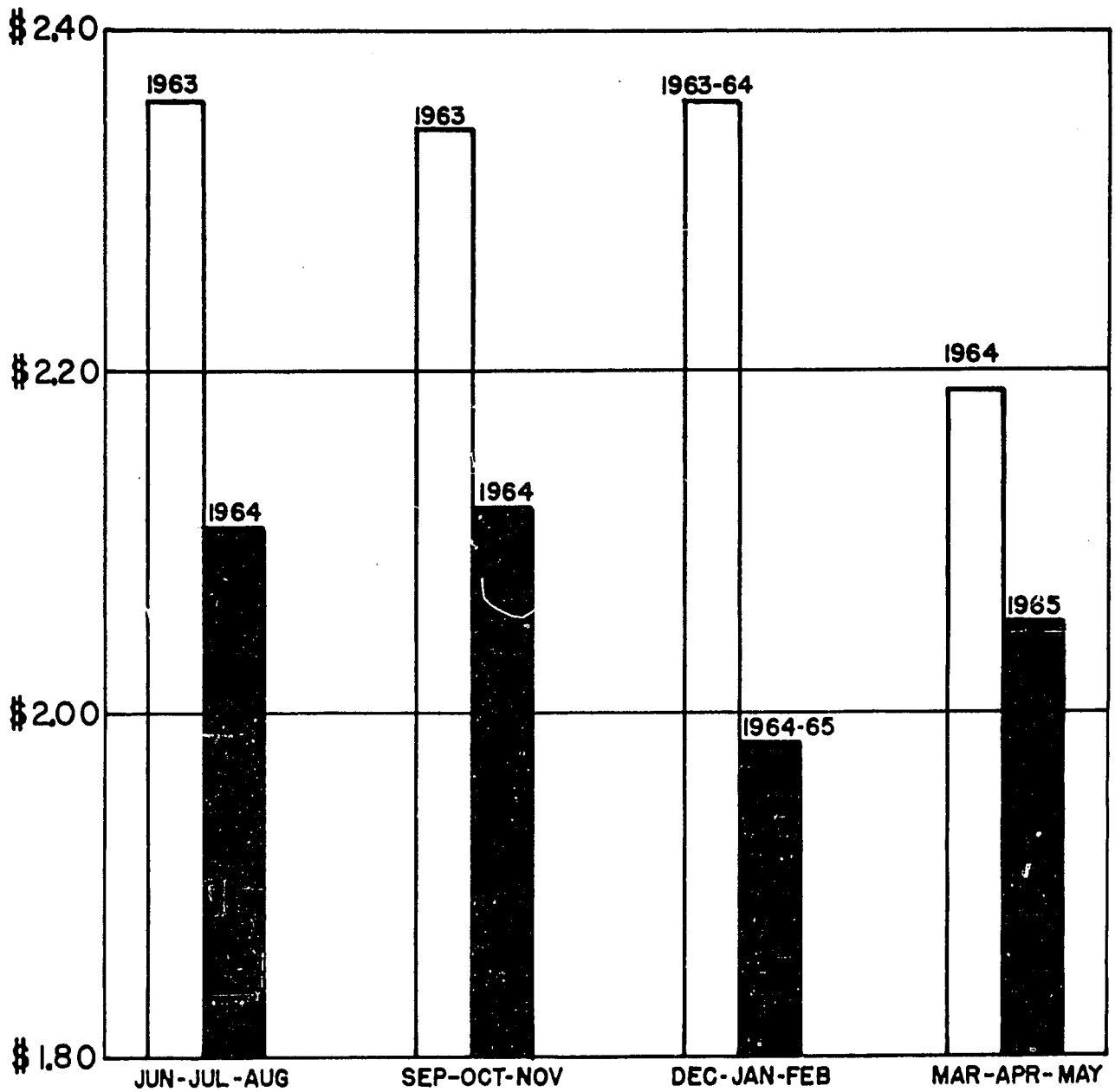
Of this amount $713,000 represents cost savings which are reflected in the following chart comparing LAB's cost per revenue plane mile for the last four quarters (June 1, 1964 through May 31, 1965) with the corresponding quarters in the years before (June 1, 1963 through May 31, 1964). This is the most recent period for which cost figures were available to NORTEAM members.

LLOYD AEREO BOLIVIANO

COST PER REVENUE PLANE MILE

(BY QUARTERS)

1963-1965



B. FINANCE AND ACCOUNTING DEPARTMENT

Accounting Section

At the outset of the project, a program was outlined covering what action should be taken in order to modernize LAB's Accounting Department. Also, a plan was established to attempt to improve the financial position of LAB. These projects were to be accomplished in cooperation with LAB and other Governmental agencies concerned.

It is important to point out that the cooperation of LAB management left much to be desired. We received very little cooperation during the first year of the contract. After the revolution of November 1964, with the change of Government, we had a change in LAB management. For approximately two months, we had very good cooperation, and then it began to diminish again.

The following comments are made on items relating to the Finance and Accounting Department in the overall program for the rehabilitation of LAB.

1. Overcome current financial crisis by collecting funds from outstanding accounts receivables, and obtaining working capital from USAID and Bolivian Government.

   Much work went into trying to collect the accounts receivable; however, the only way to press for collection of past due accounts was by Government action. We attempted to use this method, but the results were poor, as politics entered into this, as well as everything else.

   At one time we had two collectors assigned to us whose job was to collect all accounts receivables (new and past due). As one had been a chauffeur and the other a messenger, they were hardly qualified for this work. However, these were the people LAB management said we must use for the task. These collectors were able to collect only the current accounts, which would have been paid on a current basis anyway. Since the fruits of these collectors were nil, management discontinued these positions in January 1965.

Regarding funds from USAID/Bolivia, there was money allocated for LAB when the NORTEAM arrived; however, it took considerable time to secure it. Finally, these funds were made available. We were also able to get USAID/Bolivia to provide a program for purchasing avgas for LAB in the amount of $311,000. The agreement provided LAB with free avgas for a period of about ten months.

As for the Government of Bolivia, they obligated themselves for approximately $500,000 when they signed the avgas purchase agreement for LAB. USAID/Bolivia agreed to pay the $311,000 for the price of the gasoline and the Government of Bolivia agreed to pay the transportation charges.

Through various negotiations with the Government of Bolivia, the combined efforts of LAB management and the NORTEAM produced outright grants of approximately $400,000 in 1964 from the Bolivian Government. In early 1965, negotiations produced $280,000 covering the 1965 subsidy. This was the first payment of subsidy received by LAB from the Government since 1956.

2. Obtain major loan from USAID for aircraft, ground support equipment, and spare parts.

Much time was spent preparing applications for equipment loans for LAB. However, they all were rejected by USAID/Bolivia. There is no doubt in our minds that an equipment loan is needed by LAB to help put the airline back on its feet; but there would have to be a change in management's attitude before any loan would help LAB recover.

With proper management during the "free gas" period, LAB could have reduced its past obligations considerably. However, these obligations were generally neglected, and the funds were used for other purposes. We were unable to alter LAB's course as its advisors.

We tried to instill the idea of a planned payment program, which would progressively eliminate past due debts and still reserve sufficient funds to purchase needed supplies and parts. The idea was finally accepted by management, and each month beginning in October 1964, a payment schedule was prepared, based on an estimate of funds available. The program lasted until May of 1965 at which time management was back to making payments and purchases contrary to the payment plan.

3. Establish effective accounting system and procedures

The accounting system was revised to the point where it is nearly comparable to the U.S. Civil Aeronautics Board Uniform System of Accounts. Due to various idiosyncrasies, it was necessary to deviate somewhat from the CAB System to conform with the regulations of the Government of Bolivia.

When we first arrived, LAB's records were ten months behind, and it was impossible to tell how bad off the airline was at any given time. The records were brought up to a current status and were current as of July 31, 1965. There should be no reason for the work of the Accounting Department to fall behind again and be in the mess in which it was found.

The procedure of preparing a daily cash report was put into effect shortly after NORTEAM's arrival in order to have up-to-date information to help make payment decisions. Also, an operations and traffic statistics report was begun on a daily basis. Both of these daily reports were helpful in forecasting the payments which could be made.

On a current monthly basis, the following reports are prepared: Profit and Loss Statement, Balance Sheet, Cost Analysis, and complete Operational and Traffic Statistics. These reports, in some cases, were previously prepared but not as extensively as they are now and by no means were they current. With all these reports being prepared currently, it is now possible to make more accurate forecasts for the company.

4. Centralize all payments through the General Accounting Department

This was done almost immediately upon NORTEAM's arrival in Bolivia. This, of course, enabled LAB to utilize their funds much better.

Since most of the payments had to be made from Cochabamba, it was necessary to know daily what funds were available. There was no method for the accumulations of funds in any area, sometimes not even in the general account. This was corrected by the centralization.

5. Establish system of station audits

We attempted to set up station auditing procedures; but were unable to get management to provide us with an individual for this purpose. It was their contention that whenever it was necessary to audit a station, all we had to do was send out anyone available from the Accounting Department. We though this would be soved with the reorganization. However, the man who was to be the Field Auditor refused the position, and no one was named in his place.

It is an absolute necessity to have a Field Auditor when company funds and assets are so widely distributed. Without a constant check on these items, it is possible for a large amount of money to be misused. This would be as true in Bolivia as it is in the United States.

6. Maintain control of airline ticket stock

This is being controlled by sequence reporting and check-off sheets. All used flight coupons are matched with the auditor's coupons of each ticket.

7. Contract with non-scheduled carriers for services performed and bill monthly

There are no actual contracts with the non-scheduled carriers. However, a standard rate is charged for all services. This rate chart has been circulated to all involved parties and has been approved by the D.G.A.C.

With all records now up to date, users are being billed currently. There are some, of course, who do not pay on time, but it is felt that by constantly putting pressure on the Government of Bolivia for legal action, this will eventually be overcome.

8. Rebid contracts for terminal concessions

There are no contracts for terminal concessions, and it appears that it will be a long time before this comes about. Management has put the contracting responsibilities in another department which knows little or nothing about contracts, rentals, or rights values. Therefore, no progress could be made in this direction by the Accounting and Finance people.

9. Analyze and reorganize system of fringe benefits for employees

The fringe benefits of the LAB employees were analyzed, but there was nothing that could be done to eliminate the special benefits, as LAB had already contracted with the unions to pay them, even though some of them were not required by Bolivian law.

In a few cases, it was possible to reduce the amount of expense, but the only way to eliminate the contractual obligations would be to terminate the employees and pay all social benefits. Then the employees could be hired under a new contract which would include only those benefits which are required by law.

10. Award insurance contracts on bid basis

In 1964 we sent specifications for LAB's insurance needs to all interested insurance companies located in Bolivia. These companies were asked to submit their bid for the required insurance coverage, and the contract was awarded to the lowest bidder at a savings to LAB of $40,000.

In 1965 LAB, on its own, went through the same procedure. However, it is not known for sure how the contract was awarded since no bids or

computations were shown to any member of the NORTEAM. From other information received, it would appear that the second lowest bidder received the contract.

Purchasing and Stores Section

1. Segregation of Surplus Material

One of the first projects undertaken was that of determining what parts and materials were obsolete or unusable. It was found that there was a large inventory of DC-4 parts on hand and that it had been several years since LAB operated this type of aircraft. These parts were removed from the active stock and later inspected for possible sale. However, most of these parts were so badly corroded that they were unsalable. From time to time, all other slow-moving items were inspected to determine their usability.

All surplus items which were usable in Bolivia were auctioned off to the highest bidder, the proceeds being used to replenish parts or materials which LAB needed. In one instance, $7,000 was received from some obsolete automotive equipment and was deposited immediately on the purchase of new equipment which was desperately needed.

2. Cataloging of Parts and Materials

All parts were cataloged by type and in numerical sequence within account classification. This not only made it easier to locate parts and materials when requisitioned, but it also speeded up the process of taking inventory, since all parts in a specific classification were located in the same area.

3. Kardex Inventory Control

A system of Kardex inventory control was set up in conjunction with the cataloging of all parts and material. This sytem provides a current inventory record with the minimum and maximum stock level shown on each card. This enables the Kardex clerks to pull an order card when the stock level reaches or is close

to the minimum level. After pulling the order card, it is given to the buyer. An order is placed immediately, thereby reducing the chance of running out of stocked item.

4. Renovate Stockroom

LAB had eight stock rooms when the NORTEAM arrived in Bolivia. By re-arranging the stock rooms and remodeling the adjacent area, we were able to reduce the number of stock rooms to two. This, of course, made the distribution of parts and the shelving of materials much easier and faster.

5. Parts Cost Reduction and Establishment of Credit

LAB purchased most of their parts and materials through middlemen. LAB was not receiving the normally expected airline discounts, nor did they enjoy an open line of credit.

The first thing which was done was to begin purchasing direct from the manufacturer or distributor. In doing this, LAB was able to receive the regular airline discount which varies from 10 to 40 per cent off the manufacturer's price. In most cases, the cost of parts was reduced by the maximum discount rate.

LAB was on a cash-in-advance basis with all suppliers and continued this way for about a year after NORTEAM arrived. However, the NORTEAM was able to establish limited credit for LAB with many suppliers. This open credit arrangement varied between suppliers from $5,000 to $80,000. This was the first credit LAB had enjoyed for more years than anyone at LAB could remember.

6. Reorganized Department

By consolidating the stock rooms, cataloging the parts, and using the Kardex inventory control, we were able to reorganize the department without any interference from management. By reorganizing, we were able to reduce personnel from 31 to 24, with a possibility of further reduction in the future.

7. Gasoline Cost Reduction

Much time was expended in an attempt to secure a reduced price for gasoline. It took an entire year of discussions and preparation of schedules, with statistical information, before we could effect a price reduction of approximately 18 per cent.

8. Drug Cost Reduction

LAB was purchasing drugs for employees directly from the retailer. As LAB does have its own pharmacy, it seemed much more economical for LAB to purchase directly from the manufacturer or distributor. An investigation of drug costs revealed that LAB could save from 25 to 50 per cent if drugs were purchased directly. Arrangements were then made to do this.

9. Training and Manuals

A semi-weekly seminar was set up for the training of stores personnel. The response was very good; however, this needs to be a continuous program in order to keep personnel informed of changes. Also, it would give employees an opportunity to make suggestions for possible changes in methods of handling items in stores.

The Purchasing and Stores Manual which had been developed under NORTEAM direction was ready for printing when the NORTEAM departed. It is hoped that LAB will carry on this project through the printing and distribution of it to personnel.

C. TRAFFIC AND SALES DEPARTMENT

Administrative

1. Expanded and strengthened the department by developing sections on
   a. Tariffs and Schedules
   b. Public Relations
   c. Station Operations

d. Manuals

e.. Commercial Development

f. Sales

2. Reorganized the major LAB city ticket offices for better work flow

3. Changed LAB representatives in Buenos Aires and Arica to give better service

4. Completed study on competition by TAM and COMIBOL

5. Worked on an Aircraft Evaluation Survey

6. Prepared reports for USAID La Paz office:

   a. Loan applications

   b. Tariff studies

   c. Reports on flights over selected segments

   d. List of recommendations and accomplishments

   e. TAM, CBF, COMIBOL diversion studies

7. Made passenger analysis study

8. Selection of manual writer for Traffic and Ground Operations Manuals

9. Development of pass and reduced rate policy

10. Developed suggestions for DGAC regulations in following areas:

    a. Tariffs

    b. Flight frequencies (international)

    c. New route hearings

    d. New air carrier hearings

11. Arranged for a program of English classes for Traffic and Sales employees with tuition paid by LAB

12. Spent several months conducting and preparing comprehensive Market Survey for LAB (See Exhibit III)

Traffic

1. Developed Traffic Manual that incorporated the station functions

2. Developed a system of "on hand cargo reports" to get better utilization from charter flights

3. Instituted a program to put all LAB employees meeting the public in uniform
4. Centralized reservations control for all domestic services at three key cities
5. Produced Reservations Section of Traffic Manual
6. Developed a new Reservations system without increase in staff to provide:
    a. Better control of space
    b. Better utilization of space
    c. Telephone sales
    d. Expanded office hours
    e. Quality control checks

Sales and Advertising

1. Established trade agreements program - whereby newspaper and radio advertising for LAB be exchanged for transportation. Sample contracts were prepared, including credit cards and the various forms used in the accounting of these agreements. LAB management has not implemented the program.
2. Established an advertising budget
3. Developed mailing lists for:
    a. Interline carriers
    b. Tour operators
    c. Travel agents
4. Appointed Sales Promotion Representative in La Paz
5. Developed a travel agency program to create more interest in LAB by:
    a. Distribution of LAB ticket stock
    b. Payment of commissions on ticket sales
    c. Distribution of cargo waybills
    d. Payment of commissions on cargo sales
6. Developed and introduced a passenger quota system for all cities
7. Initiated a sales promotion contest for LAB station personnel
8. Instituted interline cargo and passenger agreements with other carriers

9. Established a Cochabamba Tourist Development Bureau
10. Conducted first sales blitzes for the company
11. Initiated a "free sale" program for passenger traffic with Panagra
12. Trained a LAB employee to conduct a Business Development program for LAB

Scheduling and Tariffs

1. Developed, published, and distributed new public timetables
2. Increased the available seat and cargo miles on high density domestic service. (International segments did not require any increase in frequency or capacity until 1965)
3. Restricted DC-3 operations to the lower altitude routes
4. Modified tariffs to raise the average passenger yield, averaged about 7% increase over the domestic system. NORTEAM's suggestions to revise international tariffs were rejected by management.
5. Eliminated all illegal discounts
6. Developed new cargo rates for segments in southern Bolivia where they had none previously
7. Developed LAB's first cargo schedule
8. Expanded DC-6B service to Beni cities and cities in the south of Bolivia
9. Decreased scheduled ground times to get better utilization of daylight hours for operations
10. Conducted first schedule planning meeting in LAB's history
11. Developed week-end excursion rates over La Paz-Cochabamba-Santa Cruz segments
12. Developed round trip discounts and family plan tariffs. Revised passenger and cargo rates
13. Completed domestic air freight rate study
14. Completed domestic air freight survey (volume on scheduled flights)
15. Made flight analysis study (passenger load factors and cargo ton miles)

16. Prepared flight schedule with Electra and F-27-II for Aircraft Evaluation Study
17. Prepared flight schedule with DC-6B and F-27-II for Aircraft Evaluation Study.

Station Operations

1. Improved station operating procedures at certain stations by reducing use of certain forms. (This program could not be expanded to include all stations because of governmental requirements)
2. Improved the appearance of some offices and terminals. This project was largely dependent on funds available and a loan from USAID
3. Outlined a training program for station personnel
4. Assisted in drafting plans for the improvement of Cochabamba and La Paz offices
5. Produced standard loading charts for DC-6B operation
6. Instituted program of delay investigation and analysis
7. Revised LAB uniform policy for station personnel
8. Revised LAB uniform for ground personnel with public contact
9. Made list of manpower requirements for El Alto Airport (La Paz)
10. Made a study of all LAB forms now in stock room, with assistance from department supervisors. (302 forms were reviewed, 100 eliminated)
11. Arranged for name plates for all stewardesses, stewards, and ground personnel with public contact
12. Completed program for standardizing color and design of all ground equipment
13. Arranged for inventory of all LAB ground equipment and prepared a list of additional ground equipment needed
14. Assisted in development of a master plan for a Hydrant Forced-Fuel System for the ramp at Cochabamba
15. Developed master plan for flight kitchens at Cochabamba, La Paz, and Santa Cruz and for new in-flight service equipment

Public Relations

1. Helped to restore public confidence in LAB by improving on-time performance and schedule completion
2. Conducted familiarization flights for news media representatives
3. Established a public relations office, reporting directly to the President of LAB

Statistics

1. Developed the following monthly reports:
   a. Cargo and passenger statistics--by station and by segment
   b. Summary of plane miles and hours flown by type of aircraft
   c. Origin and destination reports for passenger traffic
2. Developed a Daily Report of Operations and Traffic

   This report contains detailed information on the previous day's operation, including number of passengers carried, revenue passenger miles, load factor, performance factor, and summaries for the day and the month-to-date. This report is an invaluable aid to management as a day-by-day summary of the operation.

Training of LAB Personnel in Traffic and Sales Work

1. Eduardo Morales - Cochabamba
   a. Traffic
   b. Sales and Sales Promotion
2. Benedicto Novillo - Cochabamba
   a. Commercial Sales
   b. Sales and Sales Promotion
3. Deterlino Maldonado - Cochabamba
   a. Schedules
   b. Tariffs

4. Grover Galarza - Cochabamba

   a. Station operations

   b. Administration

5. Carlos Davila - La Paz

   a. Sales

   b. Sales Promotion

6. Carlos Lemoine - Santa Cruz

   a. Sales and Sales Promotion

   b. Office administration

7. Hugo Terrazas - Santa Cruz

   a. Sales

   b. Sales Promotion

8. Sixto Mendez - Trinidad

   a. Sales

   b. Sales Promotion

D. FLIGHT OPERATIONS DEPARTMENT

1. Flight Training

During NORTEAM's initial familiarization with LAB operations, it became apparent that a dramatic improvement in LAB's safety record was the key to regaining public confidence and restoring the pride and dignity of the airline. Therefore, the Flight Operations phase of North Central's program for the rehabilitation of LAB was extremely important. Consequently, every effort was made to attain this objective in a sequence which would permit rapid progress of restoring public confidence in LAB.

Pilot training was rated as the highest priority item. However, it was extremely difficult to get this underway because of the financial condition of LAB, the shortage of aircraft, and the apathetic attitude of General Management toward training.

Using the most of every opportunity, we indoctrinated Captain Bohrt, LAB's DC-3 Instructor, in the new flight training procedures. We then commenced Captain transition training of these pilots required for the initial schedule expansion. Santa Cruz was used as the training base for this phase because, as the major hub of DC-3 operations, it afforded a better opportunity to utilize any available aircraft time. The lower altitude at Santa Cruz also permitted realistic engine-out training.

After completion of the initial upgrading program, recurrent flight training was given to all previously checked out DC-3 Captains. In addition to revised procedures, the recurrent training included the intensive engine-out training and night flight training which had been made part of the new syllabus.

With the completion of this phase, we were assured that all DC-3 captains had attained an acceptable degree of proficiency, and we began to concentrate on the DC-6 operation.

Due to lack of DC-6 aircraft available for training purposes, we were forced to do as much training as possible during scheduled flight operations. On-the-line instruction is a valuable medium for certain phases of training, but in some instances, this method requires excessive time to attain a training objective. In a few instances, on-the-line training is almost totally ineffective.

In order to minimize these disadvantages, North Central Captains Hinke and Sohn flew hundreds of DC-6B line instruction flights. In addition, this training was given whenever possible during proficiency checks and by giving ILS training at Lima after termination of the scheduled flight.

During the extensive time spent on DC-6 line instruction, a maximum effort was made to implement sound flying techniques and to eliminate certain misconceptions that had been ingrained into the LAB pilot group.

The degree of success attained in this training program was readily discernible in the day-in, day-out performance of the DC-6 pilots, as well as in decreased maintenance required on engines, tires and brakes. This was very evident from an analysis made by the Maintenance Department in the latter part of 1964, which showed an increase in the tire and brake life of almost 100%. Engine failures, which could be attributed to operational procedures, also dropped to practically zero.

The third phase of the pilot training program was primarily devoted to upgrading (status and equipment) and training of new pilots hires needed for expanding schedules and to replace those pilots who left LAB for other flying jobs.

Although the unavailability of aircraft and other handicaps presented a never-ceasing problem, we met the requirements of an expanding schedule while increasing general pilot proficiency and improving LAB's operational safety factor.

The in-flight phase of North Central's Flight Operations program was extremely important. The amount of time expended by NORTEAM flight personnel in this phase of the program is shown in the Operations Flight Activity Reports. For example, Capt. Arthur Hinke's Flight Activity Report for 1964 follows.

1964 FLIGHT ACTIVITY REPORT

(Captain A. W. Hinke)

Date	Aircraft	Crew	Hours
Jan.			
10	740	Hinke-Perez-Gonzalez-Rodriguez	19:59
13	740	" Perez-Scott	1:20
21	591	" Scott-Rodriguez	6:39
27	740	" Perez-Scott	5:43
Feb.			
4-6	740	Hinke-Perez-Calderon-Bohrt	12:56
20-21	591	" Gonzalez-Navia	5:05
27	740	" Moreira-Perez	1:10

Date	Aircraft	Crew	Hours	
March				
1	740	Hinke-Calderon-Cossio-Borht	1:48	
2	698	" Rodriguez-O'Connor	1:01	
10	583	" " Jaldin	3:08	
11	583	" " "	6:40	
12	583	" " "	5:23	
13	583	" " "	3:59	
14	583	" " "	3:22	
16	583	" " "	7:56	
17	583	" " "	4:48	
18	583	" " "	6:25	
19	583	" " "	3:41	
24	740	" Cossio-Vacaflores-Villarroel	5:49	
25	740	" " "	6:10	
27	583	Hinke-Rodriguez-Jaldin	7:16	
28	583	" " "	5:40	
30	583	" " "	5:20	
30	583	" " "	3:50	(night)
April				
1	583	Hinke-Rodriguez-Jaldin	4:50	
2	583	" " "	2:16	
3	583	" " "	4:54	
8	583	" O'Connor	Check	
9	698	" Moreira-Revollo	"	
11	573	" Vacaflores-Arab	1:17	(same a/c 2:58)
14	698	" Cossio-Vacaflores	5:31	
15	698	" " "	6:29	
19	583	" Rodriguez-Jaldin	2:50	(check-Perez)
28	583	" Vacaflores-Arab	4:10	
29	740	" Vorht-Sohn	6:22	
May				
1	740	Hinke-Cossio-Arab	6:35	
6	715	" Moreira-Sohn	4:06	
7	715	" " "	3:49	
9	698	" Ressini "	6:05	
10	698	" " "	:47	
13	698	Sohn-Hinke-Vacaflores	5:13	
14	698	" " "	3:46	
15	740	" " Ressini	7:03	
16	740	" " "	2:44	
20	740	" " "	4:59	
21	740	" " " Amundson	7:06	
22	698	" " " "	.+7	
25	583	Navia	3:54	
26	583	"	1:17	
27	740	Sohn-Hinke-Navia-Amundson	3:40	
28	740	" " "	3:36	
30	740	Hinke-Vacaflores-Arab	1:00	
June				
1	698	Sohn-Hinke-Navia	5:25	
2	698	" " " Amundson	5:11	
3	698	" " " "	5:22	

Date	Aircraft	Crew	Hours
June			
5	573	Navia	:24
8	573	"	2:32
8	583	"	1:44
9	583	"	6:27
10	573	"	2:36
10	583	"	2:00
10	715	Cossio-Salazar	1:08
11	740	" Gonzalez	5:27
12	740	" "	6:24
16	740	Scott-Andrade-Hinke	1:06
16	740	Perez-Scott-Hinke	5:06
17	740	" " "	5:04
17	573	Navia	2:15
17	573	"	:34
18	573	"	2:14
18	573	"	2:18
19	715	Gonzalez-Hinke-Ressini	4:23
20	715	" " "	1:04
21	698	Perez-Cossio	3:12
22	583	Navia	4:50
23	583	" Perez-Sohn	1:07
24	740	Gonzalez-Hinke-Quiroga	3:37
25	740	" " "	3:47
30	740	Calderon-Rodriguez-Hinke	5:59
July			
1	740	Calderon-Rodriguez-Hinke	6:02
3	740	Perez-Calderon-Hinke-Andrade	1:00
4	740	" " " "	2:15
5	740	" " " "	1:03
6	698	Andrade-Hinke-Revollo	7:13
7	698	" " "	7:09
8	698	" " "	2:51
10	698	Cossio-Vidales-hinke	3:30
10	698	" " "	2:15
11	698	" " "	5:57
14	715	Salazar-Hinke-Villarroel	7:34
15	715	" Andrade-Calderon-Hinke	1:23
16	715	" " " "	4:01
17	740	Perez-Hinke-Flores	5:11
17	740	" " "	3:38
23	698	Scott-Hinke-Revollo	5:26
24	698	" " "	3:55
25	698	Sohn-Hinke-Villarroel	3:33
26	715	" " "	4:03
27	715	Hinke-Flores-Villarroel	:55
29	698	Scott-Hinke	3:42
August			
1	740	Andrade-Hinke-Navia	2:40
3	740	Vidales-Hinke-Jaldin	7:39
4	740	" " "	8:09
8	740	Hinke-Revollo-Rodriguez	4:15

Date	Aircraft	Crew	Hours
August			
8	594	Revollo-Hinke	2:26
11	698	Gonzalez-Hinke-Villarroel	7:26
12	698	" " "	3:59
13	715	Hinke-Flores-Villarroel	6:40
19	740	Salazar-Hinke-Ressini	2:42
19	740	Borht-Hinke-Rodriguez	4:17
20	740	" " "	6:25
22	740	Hinke-O'Connor-Rodriguez	3:05
22	740	Andrade-Hinke-Ressini	:58
26	698	Gonzalez-O'Connor-Villarroel	:54
26	698	" " "	:55
27	529	Vacaflores-Hinke	2:13
27	715	Hinke-Vacaflores-O'Connor	4:31
29	740	Andrade-Hinke-Mendez	2:38
Sept.			
2	740	Scott-Hinke-Jaldin	5:25
3	740	" " "	6:20
3	620	Perez	:48
5	715	Hinke-Palacios-Lopez	3:30
6	715	" " "	3:37
7	715	" Mendez-Flores	:44
9	698	Cossio-Hinke-Vacaflores	3:53
25	740	Scott-Hinke-Mendez	3:42
20	698	Calderon-Hinke-Quiroga	5:25
Oct.			
1	740	Calderon-Hinke-Quiroga	5:15
1	740	Hinke-Vacaflores-Quiroga	1:05
6	573	Hinke-Sohn	:46
7	698	Vidales-Hinke-Flores	5:45
8	698	Vidales-Hinke-Flores	5:49
9	740	Cossio-Salazar	:53
10	698	Calderon-Scott-Quiroga	3:51
14	740	Hinke-Ressini-Revollo	2:41
17	715	Andrade-Hinke-Ressini	3:39
24	583	Badani	2:27
25	715	Hinke-Revollo-Ressini	5:10
28	715	Scott-Hinke-Revollo	5:52
29	715	" " "	6:17
Nov.			
17	715	Vidales-Hinke-Revollo	1:47
21	698	Hinke-O'Connor-Lopez	5:20
26	715	Scott-Hinke-Gandarillas	3:48
27	715	" " "	6:09
Dec.			
2	698	Hinke-Vacaflores-Mendez	3:42
5	698	Hinke-Andrade-Sohn-Amundson	5:12
10	698	Gonzalez-Hinke-Urey	5:21
11	715	Bohrt-Hinke-Gonzalez-Vidales	2:06
16	715	Hinke-Mendez-Ressini	3:23
		Total	605:43

It should be pointed out, however, that the success attained in this flight training program would not have been possible without the fine cooperation of the LAB pilot group itself and the hard work of Capt. Calderon and Capt. Bohrt. Both of these supervisors showed that they were capable of carrying out their responsibilities and would continue to do so if given the necessary support from General Management.

The increase in pilot training activity during NORTEAM's tour of duty is impressive. For example, the flight training accomplished from January through September 1963 (including the training given with assistance from Panagra) was less than one-tenth of that in the year 1964. Total flight training accomplished during NORTEAM's stay is represented by the following:

a. Ten co-pilots upgraded to Captain

b. Refresher DC-3 flight training given to all DC-3 Captains checked out prior to NORTEAM's arrival

c. Six B-17 Captain check-outs

d. Six B-17 co-pilot check-outs

e. Four DC-6B Captain check-outs

f. Twelve DC-6B co-pilot/engineer check-outs

g. Twelve new co-pilots hired and trained

h. ILS training at Lima for all DC-6B Captains (8)

i. VOR training at São Paulo for LAB instructor pilots

During 1964, NORTEAM Flight Operations personnel (Captains Hinke and Sohn) flew approximately 1,000 hours of training, check and line instruction flights. The time spent in flight training activities is especially significant when considering the other requirements of the Flight Operations Department in the overall project for the rehabilitation of LAB.

2. Ground School Rehabilitation

The Ground School facilities which had degenerated into a condition

difficult to describe, required extensive restoration and reorganization. This was accomplished by or under the direction of Mr. C. G. Amundson, NORTEAM Operations and Maintenance Ground School Training Specialist. These improvements made the Ground School facilities something that LAB could point to with pride.

The rehabilitation program included staffing the school with carefully selected bilingual instructors. These instructors were thoroughly trained so that the Training Center would continue to provide maximum usefulness after NORTEAM left.

3. Ground School Training

Excellent use was made of the revitalized Ground School in all phases of the flight crew training program. The attendance record of the pilots scheduled for recurrent ground school training is indicative of the quality of training provided. Total ground school training accomplished for flight crew members during NORTEAM's tour of duty is shown below.

a.	DC-6B ground school	1550 student-hours
b.	DC-3 ground school	706 student-hours
c.	B-17 ground school	420 student-hours
d.	Link training	711 hours

4. Development of new check lists for DC-3 and DC-6 equipment

The aircraft check lists used by LAB prior to the arrival of NORTEAM contained superfluous items which were poorly sequenced. This retarded crew coordination and made the check list difficult to use. The awkwardness and excessive length of the check list was evident from the fact that it was impossible to complete the appropriate sections during a normal take-off, a circling approach, or a landing sequence. The new check lists that NORTEAM developed were geared to LAB's operation. They promoted fast, efficient, and coordinated use under all conditions.

5. Elimination of DC-3 high altitude operation

Since the DC-3 equipment was absolutely incapable of meeting the most

minimum engine-out performance requirements on LAB's high altitude routes, the restrictions placed on DC-3 operation by NORTEAM was a big step toward improving LAB's operational safety factor.

6. Preparation of aircraft manuals and flight training material

Flight training syllabus material and aircraft manuals were rewritten and translated into Spanish. NORTEAM Operations personnel also located source of suitable paper, borrowed the multilith mats needed for reproduction, and arranged for low cost printing through USAID facilities.

7. Installation of Jeppesen enroute chart revision service

Prior to NORTEAM's arrival, the LAB pilots were using a variety of charts, most of which were badly out of date. The Jeppesen revision service provided them with up-to-date information on route distances, mileages, frequencies, minimum altitudes and reporting points.

8. Increased pilot utilization

Captain utilization for 1963 averaged 67:19 hours per month. Average for 1964 was 83:21 hours per month--an increase of 24 per cent.

9. Recalculation of domestic route mileages

The enroute mileages used by LAB contained so many errors that all distances were remeasured, and revisions were issued to all departments.

10. Participation in Communications and NAVAID Program

NORTEAM Operations personnel participated in studies and recommendation programs relative to communications and navigational aids for Bolivia. Although most of the programs were tied to future participation by the U. S. Government, NORTEAM believes that its recommendations were helpful in LAB's acquiring additional VHF equipment and improving point-to-point communications over the Santa Cruz-Sao Paulo segment. It is also hoped that NORTEAM recommendations will be followed in locating the VOR installation programmed for La Paz.

11. Participation in airport programs

NORTEAM Operations personnel worked closely with Mr. Luis Sterminski (RAAG) in development of feasibility studies. NORTEAM personnel and Mr. Sterminski were directly responsible for effecting early low cost improvements at Guayaramerin and Riberalta and for the inclusion of a bituminous binder coat in first phase construction at Santa Cruz. This proved to be of great value in improving and preserving the runway surface.

12. Participation in LAB-NORTEAM Aircraft Evaluation Study

NORTEAM Flight Operations technicians prepared a detailed operational analysis of all aircraft proposed by the LAB/ NORTEAM Aircraft Evaluation Committee and assisted in the preparation of the turbo-study presentation which was made to USAID/Bolivia. NORTEAM Operations personnel also prepared a summary report of the presentation for the benefit of LAB and USAID/Bolivia.

13. Development of advanced training program

NORTEAM Flight Operations personnel developed an advanced Stateside Pilot Training Program which, if undertaken, would have given LAB pilots an unprecedented opportunity to acquire a high degree of proficiency in the use of advanced NAVAIDS, air traffic control procedures, and approach systems at a very modest cost. Although this program was approved and funded by USAID/Bolivia, it was dropped just short of implementation for reasons best known by LAB management.

14. Improvements in Flight Dispatching

a. A great deal of time and effort was spent attempting to instill in the Flight Dispatchers the sense of responsibility that is required to make on-the-spot operational decisions affecting flights. Although the reluctance of LAB management to delegate authority to Flight Dispatchers prohibited complete fulfillment of our aims, we did achieve a marked improvement in the scheduled operation.

b. Origination of a plan to provide accurate flight information to the public. This was something entirely new and was appreciated by the passengers.

c. Development of an Operations Report which was geared to LAB's need. This report pinpointed the reasons for delays, interruptions, cancellations, reroutings of scheduled flights. It also gave a brief description of any non-scheduled flying.

d. Elimination of superfluous forms, thus making employees available for other productive work.

e. Establishment of a training program for cabin attendants which emphasized evacuation; adherence to seal belt, no smoking, cargo loading restrictions; and first-aid training.

15. Development of operational advice

The various recommendations, analyses and opinions prepared by NORTEAM Operations personnel were made available on a voluntary as well as on a request basis. This advice was based on sound judgment and extensive airline flight knowledge and experience.

16. Improved safety record

We believe that the efforts of NORTEAM Operations personnel were a major factor in improving LAB's safety record and, therefore, a fair share of credit and recognition should be properly assigned to NORTEAM for the restoration of public confidence in LAB and resulting increase in traffic.

SUMMARY: The Flight Operations accomplishments listed in this section show that considerable progress was made. In view of the handicaps--which included just about everything from politically motivated opposition to a pathetic lack of training aircraft, equipment, and money--we believe that the progress made in LAB's Operations Department was significant.

In order to avoid any possible misconceptions, it should be emphasized that no specific funds were available for the establishment of a systematic training program, for the production of manuals, or for other phases of NORTEAM's Flight Operations projects. Most of these programs were "boot strap" operations in

every sense of the term. The accomplishments resulted from making the very best of what was available, plus NORTEAM's contributing hundreds of overtime hours and many free days to further the project.

E. MAINTENANCE AND ENGINEERING DEPARTMENT

1. Facilities

Our first efforts were directed to the repairing, clean-up, and painting of all facilities within the limits of funds and manpower available. This included replacing over 200 broken windows, replacing cement floors in the blacksmith shop and engine build-up shop, building an engine teardown building, enlarging the engine parts cleaning room, repairing the sidewalks and walls of buildings, and giving all buildings a new paint job. Hedges were trimmed, weeds were removed, and lawns restored, making the area a nice place to work in again.

In order to eliminate washing aircraft by hand using quart pails, a water tower with the necessary plumbing was built. This increased water pressure for the washing of aircraft and other uses, such as flushing toilet facilities.

The construction of a blast-fence around the engine test cell was completed for noise control.

The electrical and compressed air systems, as well as service outlets, in ramp tunnels on both side of aircraft parking and servicing ramp, were renovated to facilitate inspection and repairs of aircraft, especially at night.

Supervision was given to the fabrication of a screen and dark room in which to project training films.

Link trainers were transferred to Training Center area to centralize all training functions in a single building.

2. Labor Matters

The working hours of the maintenance force were changed to coincide with the supervisors' schedule, and all "moon-lighting" was eliminated. This change

was resisted very vigorously by the union leaders with the treat of calling a strike. However, the majority of the workers supported the change, and it was finally put into effect.

3. Flight Equipment and Overhaul Shops

All five aircraft that were out of service on our arrival were overhauled and made operable.

Instrument panels of DC-3's and C-47's were modified and gyro flight instruments were installed on co-pilot's side. These changes contributed substantially to flight safety.

DC-3 and C-47 electrical systems were standardized to 24 volts, from 12 volts.

A new exterior paint design was developed for all the different types of aircraft and ground equipment, and everything was painted accordingly.

The procedures in the engine overhaul shop were studied thoroughly and, on the arrival of the NORTEAM Power Plant Specialist, overhaul of both the R-1830-92 and R-1820-97 engines was increased substantially. Previously, engine overhaul had virtually stopped awaiting the arrival of spare parts that had been ordered. However, under the guidance of the Power Plant Specialist, 17 engines were overhauled by using serviceable parts from engines that had been set aside as run-outs or internal failures and discarded.

All overhaul procedures were studied and up-dated. New overhaul manuals and specification sheets were procured from the manufacturers and vendors. New parts catalogs were received and distributed to all shops. Past records of the various shops were scrutinized, and maximum and minimum balances were established for the Stores Section.

Weekly production records, by serial number, were required from each shop so unit shortages could be spotted and corrected. This also gave a good yardstick of production. The flow of work through each shop was studied and modified

for better utilization of space and to increase production.

Impact wrenches and speed wrenches were ordered and put into the engine overhaul shops.

Increased time on airframe overhauls on DC-3's and DC-6's was obtained from DGAC. Also, the time between required overhauls on R-1830 and R-2800-CB16 engines was increased through improved quality of overhaul and with DGAC approval.

Handling of aircraft parts was improved by:

a. Installing rotable parts procedure in all shops.

b. Completing a R-2800 engine spare parts list in Spanish and English.

c. Installing a rotable part numbering system based on U. S. Air Transport Association Specification 100.

d. Completing inventory of parts at all maintenance bases.

e. Creating a rotable parts storage area.

f. Setting up and distributing a rotable parts catalog.

A maintenance work forecast was installed to improve scheduling of the work load for all shops.

A new simplified work code procedure was established for determining costs.

4. Inspection Section

The Inspection Section was instructed to consolidated the separate engine and airframe inspection times to reduce the number of visits the aircraft had to make to the maintenance base, thereby reducing ferry flights and operating expenses.

The annual DGAC inspection was scheduled so that no flight time is lost.

Estimates were prepared on the cost of overhauling DC-3 type aircraft by LAB for other operators.

5. Line Maintenance

Two new supervisory positions were created in the Line Maintenance Section to provide complete coverage on weekends and holidays.

New methods were worked out with the Flight Operations Department for improved operation of the DC-3 and C-47 aircraft on let-down procedures which reduced engine failure rate by 66%.

A reserve supply of spare engines was built up through the better utilization of manpower and better quality parts. Problems that were chronic with brakes, cabin compressors, water regulators and other accessories (which affected on-time performance of the aircraft) and due to poor servicing techniques were entirely remedied, and the reliability of flight equipment tremendously improved.

A study of R-1830-92 crankshafts as related to R-1830-92 engine failures was completed.

An improved aircraft rotation and schedules system was worked out in cooperation with the Flight Operations and Traffic and Sales Departments.

A Santa Cruz line maintenance base was created, staffed, and equipped. This contributed substantially to improved line maintenance reliability. Other maintenance work was also accomplished there.

6. Aircraft Evaluation Study

The maintenance and engineering section of the Aircraft Evaluation Study was completed, together with direct and indirect maintenance cost comparisons for those aircraft under review.

7. Integration into LAB's Operation of Aircraft Transferred from other Governmental Agencies

The clean-up, inspection, and repairs to the B-17 received by LAB from CBF was completed. The aircraft entered scheduled operation as CP-621. The clean-up, inspection, repairs and licensing of both C-47 aircraft acquired by LAB from CBF was accomplished, and the aircraft placed in service of LAB (CP-734 and CP-735).

8. Training Program

Formal classroom training was conducted for maintenance supervisors and mechanics.

Besides this, certain LAB employees were trained in overhaul of radar, VHF, and VOR equipment in the United States.

PERSONNEL TRAINED UNDER THE DIRECTION OF NORTEAM MEMBERS

BY LAB GROUND INSTRUCTORS MR. JULIO VALENZUELA AND MR. JORGE SALAMANCA

Names	Classification	Time	Grade
Class 64 M1 DC-6B	April 20 to 24, 1964		
Miguel Veizaga	Inspector	41 hours	85%
Jorge Usieda	Crew Chief	41 hours	85%
Alberto Frias	Mechanic	41 hours	85%
Oscar Herbas	Mechanic	41 hours	83%
Francisco Espinoza	Mechanic	41 hours	74%
Oscar Ontiveros	Mechanic	41 hours	90%
Edwin Arevalo	Mechanic	41 hours	86%
Roberto Jaimes	Mechanic	41 hours	70%
Osvaldo Amestegui	Mechanic	41 hours	78%
Ramon Malpartida	Mechanic	41 hours	70%
Walter Oporto	Mechanic	41 hours	78%
Class 64 M2 DC-6B	April 27 to May 1, 1964		
Hugo Antezana	Crew Chief	34 hours	88%
Eduardo Rivero	Inspector	34 hours	86%
Jonas Mercado	Mechanic	34 hours	70%
Jorge Fuentes	Mechanic	34 hours	78%
Salustiano Argote	Mechanic	34 hours	62%
Cecilio Blanco	Mechanic	34 hours	74%
Jose Soria G.	Mechanic	34 hours	90%
Ruben Oropeza	Mechanic	34 hours	70%
Rene Zurita	Mechanic	34 hours	76%
Hugo Vasquez	Mechanic	34 hours	78%
Class 64 M3 DC-6B	May 4 to 8, 1964		
Lucio Antezana	Inspector	24 hours	90%
Daniel Ferrel	Crew Chief	38 hours	86%
Dulfredo Torrico	Mechanic	20 hours	80%
Justino Pereira	Mechanic	38 hours	72%
Alejandro Medina	Mechanic	38 hours	62%
Efrain Hinojosa	Mechanic	38 hours	70%
Modesto Claure	Mechanic	38 hours	70%
Oscar Heredia	Mechanic	34 hours	64%

Names		Classification	Time	Grade
Class 64 M4	DC-6B	May 11 to 15, 1964		
Arturo Torrico		Inspector	32 hours	72%
Abel Pariente		Crew Chief	32 hours	84%
Hugo Cox		Mechanic	32 hours	94%
Saturnino Dorado		Mechanic	32 hours	76%
Huberto Obleas		Mechanic	32 hours	74%
Pascual Calisaya		Mechanic	32 hours	60%
Benicio Navarro		Mechanic	32 hours	60%
Fanor Melean		Mechanic	32 hours	86%
Class 64 M5	DC-6B	May 18 to 22, 1964		
Raul Velarde		Inspector	40 hours	84%
Alberto Pardo L.		Crew Chief	40 hours	80%
Javier Leigue		Mechanic	40 hours	82%
Manuel Guzman		Mechanic	40 hours	70%
Emilio Herrera		Mechanic	40 hours	72%
Teofilo Zambrana		Mechanic	40 hours	68%
Gustavo Cuentas		Mechanic	40 hours	66%
Jorge Sandivar		Mechanic	40 hours	70%
Esteban Altamirano		Mechanic	40 hours	68%
Manuel Morales		Mechanic	40 hours	66%
Class 64 M6	DC-6B	July 6 to 22, 1964		
Rafael Torrico		Supervisor	40 hours	79%
Cleomedes Fernandez		Supervisor	40 hours	81%
Class 64 M7	DC-6B	December 22, 1964 to January 22, 1965		
Dulfredo Torrico		Mechanic	60 hours	68%
Jorge Fuentes		Mechanic	60 hours	80%
Jose Herbas		Mechanic	60 hours	74%
Rodolfo Ledezma		Mechanic	60 hours	68%
Hugo Cox		Mechanic	60 hours	88%
Francisco Espinosa		Mechanic	60 hours	60%
Class 64 M8		Prop-Dynamic-Balance	June 10, 1964	
Lucio Melgar		Inspector	2 hours	90%
Fernando Artero		Inspector	2 hours	88%
Enrique Paz		Inspector	2 hours	75%
Raul Velarde		Inspector	2 hours	80%
Jaime Mendoza		Inspector	2 hours	75%
Miguel Veizaga		Inspector	2 hours	75%
Cleomedes Fernandez		Inspector	2 hours	78%

N a m e s	Classification	Time	Grade
Class 64 M9	Prop-Dynamic-Balance	June 25, 1964	
Alberto Antezana	Inspector	2 hours	88%
Javier Leigue	Inspector	2 hours	80%
Arturo Torrico	Inspector	2 hours	72%
Class 64 M10	DC-6B Refresher	La Paz May 23 to 24, 1964	
Eduardo Rivero	Inspector	10 hours	86%
Grover Calderon	Mechanic	10 hours	75%
Emeterio Torres	Mechanic	10 hours	72%
Class 64 M11	DC-3 and DC-6B Refresher	Trinidad December 14 to 16, 1964	
Ramiro Arteaga	Crew Chief	20 hours	82%
Arnaldo Suarez	Mechanic	20 hours	78%
Rodolfo Mejia	Mechanic	20 hours	75%
Class 64 M12	DC-6B Refresher	La Paz December 20, 1964	
Daniel Ferrel	Crew Chief	5 hours	84%
Hernan Soria	Mechanic	5 hours	78%
Jose Gamboa	Mechanic	5 hours	80%
Class 65 M1	DC-3 and DC-6B Familiarization	Santa Cruz February 1 to 4, 1965	
Hugo Helbingen	Crew Chief	25 hours	84%
Fernando Artero	Inspector	25 hours	90%
Avelino Calderon	Mechanic	25 hours	80%
Oscar Herbas	Mechanic	25 hours	78%
Osvaldo Amestegui	Mechanic	25 hours	78%
Emigdio Salvatierra	Helper	25 hours	50%
Carmelo Vaca	Helper	20 hours	40%
Edmundo Paredes	Helper	20 hours	35%
Manuel Cespedes	Helper	25 hours	60%
Class 65 M2	DC-3 and DC-6B Refresher	Santa Cruz March 10 to 13, 1965	
Hugo Helbingen	Crew Chief	20 hours	88%
Arturo Torrico	Inspector	20 hours	79%
Luis Mayorga	Mechanic	20 hours	77%
Efrain Hinojosa	Mechanic	20 hours	75%
Emeterio Torrez	Mechanic	20 hours	72%
Manuel Cespedes	Helper	10 hours	58%

IV. NORTH CENTRAL TEAM'S RECOMMENDATIONS REJECTED BY LAB

A. MANAGEMENT-ADMINISTRATION

1. Reduction in personnel

   This was partially completed, but our estimates indicate another 100 employees could be eliminated.

2. Re-assignment of personnel to jobs for which they were trained or are better qualified to perform.

3. Establishment of a system of Grievance Committees and a System Board of Adjustment to handle union problems

   This would relieve the General Manager of all labor problems of a minor nature.

4. Completion of the reorganization plan and adoption of job descriptions, so responsibility and authority would be clearly defined.

5. Move the LAB President's office to Cochabamba

   This would permit more efficient handling of airline matters and the elimination of the many trips to La Paz that are very time-consuming.

6. Elimination of the meddling of the union leaders in management affairs.

B. FINANCE AND ACCOUNTING

Accounting Section

1. Trade agreement program

   This is a program whereby LAB would trade transportation for services and supplies with no cash outlay. This would enable LAB to reduce many past due obligations.

2. Re-assignment of per .. nel

   This program was set up to re-assign those people who were not qualified in their present job or possibly more qualified for more important work The result would be to have the right people do the right job faster and better.

3. Budget

   We attempted to prepare a budget for LAB in order to try to work out a way for the company to live within its menas. Much time and effort went into the ground work for this program; however, management chose to ignore it.

4. New accounting machines

The NCR machines being used by the Accounting Department are old and have insufficient capacity. To prepare the payroll, it is necessary to run the work through the machine twice. A request for two new NCR Model 33 machines was made and turned down by management. This proposed machine has two and one-half times the capacity of the old machines and is twice as fast.

At present many tasks are being done by hand which, if put on machines, would save up to 60 per cent of the time now spent in doing the work. With a larger capacity machine, LAB could put all its statistical data on it, eliminate two people in the Statistical Department, and produce the same results in half the time. With future expansion, it will become increasingly necessary to replace these old machines.

5. Reduce Correspondence

It has been the policy of LAB to acknowledge every piece of mail received. NORTEAM suggested that LAB acknowledge only that correspondence which required it; however, they continue to waste hours upon hours in writing "we acknowledge yours of . . . ."

6. Change of forms and procedure

We had hoped that with the reorganization of the department, we would also be able to change various forms and procedures to speed up and increase the efficiency of the work. While management has not formally rejected these recommendations, they have been more or less ignored.

7. Use of information obtained from Stateside training program

With the reorganization of the departments in effect, we were able to get management to agree to send two Accounting people to Minneapolis, Minnesota to be briefed on North Central's Accounting procedures in those areas which could be helpful to LAB. These two men spent two weeks being oriented in various accounting functions and returned with much knowledge and the desire to put new methods to work

However, when the NORTEAM left Bolivia, management had not yet given approval to make any changes, and it appears their training may have been wasted.

8. Cost control

We attempted to set up a program where the expenses for the month would be reviewed by management at a meeting of all department heads. At this time, the areas in which expenses could be reduced would be discussed, and the departments could review this with their section heads. They, in turn, would be more "cost conscious". Management said this would be useless as these people would not understand what they were expected to accomplish. However, it is NORTEAM's opinion that if these people can repair and fly the aircraft, they can understand the advantages to LAB of trying to reduce expenses.

9. Vacation scheduling

Management was letting everyone and anyone go on vacation when they desired. This was a major problem in some departments, as they would have so many people on vacation at one time that it would be impossible to get the necessary work accomplished. It was suggested to management that a program be set up stating how many from each department could be on vacation at one time and that personnel must request the specific vacation time desired. If too many requests for the same time were received, vacations would be granted on the basis of seniority. This was not in effect when the NORTEAM left Bolivia.

Items accepted in theory but rejected in practice

1. Outside audit

Management was in agreement with the NORTEAM that the accounts and records of LAB should be audited each year. They did not like the idea of paying for it, though. We finally were able to get the 1963 records audited. However, they still were delaying a decision on the audit of the 1964 records when the NORTEAM left Bolivia.

2. LAB Reorganization

The reorganization plan, though delayed many times, finally was put into effect on

a limited basis on January 15, 1965. The basic concept was effected without including the authority or responsibility which goes with the various job classifications. Unless management is willing to give the personnel the authority and responsibility of their positions, the reorganization will not produce any more results than the old organization plan.

3. Budget payment plan

Each month the available funds were estimated. Then, under NORTEAM's direction, a schedule of payments to be made on the various obligations was established. After a couple of trial months, this began to work well--until management, after approving the payment schedules, decided to deviate at will. This, needless to say, caused chaos because we had promised suppliers their payments and the money had been used for other purposes.

Purchasing and Stores Section

1. Employees' Buying Syndicate

The format for the Employees' Buying Syndicate was completed, as well as the determination of prices and discounts that would be offered by local merchants. The items that held the most interest for the employees were household items and Honda motorbikes. LAB was offered discounts of up to 30 per cent, based on volume, and the program would have been financed by a payroll deduction plan. The complete plan was presented to the General Manager of LAB during the week of July 25, 1964 for review and remarks. No answer has been received to date.

2. Daily purchase commitment reports

We attempted to provide management with daily purchase commitment reports whereby they would know at all times what purchase orders were being processed and how much money LAB had committed. They have shown no interest in knowing the amount of money commited to purchases.

3. Purchasing and distribution controls

An attempt was made to set up a control over purchase requisitions and purchase orders to insure the purchasing of only the necessary and correct items.

Management, however, did not seem to think any control was necessary. Consequently, many critically needed items have gone unordered, and items with less priority have been ordered, received, and shelved for use in the future.

Control of the disbursement of combustibles has been and is now very loose. For instance, there is no way of insuring that gasoline is disbursed only to authorized individuals and into authorized vehicles. A check revealed that in one week 100 gallons were disbursed to one vehicle, but only 100 kilometers were registered on the speedometer. This would indicate that the vehicle ran only one kilometer per one gallon of gasoline. Again, management ignored the NORTEAM suggestions for control over this area even though they know it involves thousands of dollars each month.

C. TRAFFIC AND SALES

1. A continuing sales program based on the "blitz" technique
2. Use of a standard weekly activity report by all sales representatives
3. Joining UATP credit plan
4. Trade agreement programs
5. An advertising budget with planned continuing program
6. A uniform free and reduced rate transportation policy
7. An increase in meat flight tariffs to cover aircraft operating costs
8. A suggested bag for interior of meat-carrying aircraft to avoid corrosion
9. A refrigeration plant in the Beni for storage of freshly slaughtered meat, thus improving the utilization of B-17 aircraft.
10. A plan to improve ground transportation for passengers and collect fees, thus covering expenses
11. Changes to improve statistics department
12. System to provide quality control checks on reservations and passenger handling services

13. A program to provide English classes for LAB employees at no cost to the employee or company

14. Changes in Cochabamba city ticket offices to reduce rent expense

15. Suggestion that PRESLAB file objection to TABSA application for U.S. service because of probable diversion of LAB traffic

16. Employee suggestion system

17. Revised baggage handling system

18. Flight advisory reports to improve information service

19. Surcharge on excess baggage over 100 pounds

20. Adjustment of international tariffs to 90% of IATA

D. FLIGHT OPERATIONS DEPARTMENT

1. DC-3 high altitude restrictions

Although NORTEAM eliminated DC-3 equipment from high altitude operations for reasons involving basic safety, LAB moved steadily toward reinstating DC-3 service into high altitude airports after NORTEAM co-administration ceased.

2. Use of operations report

The improved daily operations report established by NORTEAM Flight Operations personnel was discarded. LAB claimed it took too much time to prepare it, but we feel that it was discarded because it pin-pointed responsibility for operational shortcomings.

3. Utilization of Jeppesen Revision Service

This was installed by NORTEAM at a very nominal cost ($25 a month) but was canceled by LAB to "save money". Prior to subscribing to Jeppesen Enroute Chart Revision Service, LAB pilots were using an assortment of airport and enroute charts which were badly out of date and constituted a potential safety hazard.

4. Stateside pilots' training program

After several months of work, this program was approved and funded by USAID/Bolivia. It failed to become a reality for reasons known only by LAB management.

5. Intra-company pilot training program

This was a proposal to train two LAB pilots, who were considered to be best qualified, to assist in the flight check and training programs.

E. MAINTENANCE AND ENGINEERING DEPARTMENT

1. Consolidation of engine and aircraft inspection visits

This was put into effect at one time, but was later discarded.

2. Expediting of parts through Customs in order to eliminate lengthy delays
3. Stateside training for the foreman and inspector of the Engine Overhaul Shop
4. The balancing of propellers to the engines (R-1830 and R-1820) in order to eliminate vibration

Mechanics and inspectors were trained twice for this operation, but it was never instituted.

5. The assignment of permanently-based mechanics and inspectors at La Paz, Santa Cruz and Trinidad

This would have eliminated the constant rotation of mechanics and inspectors who were on per diem while away from Cochabamba and also instilled pride in the function of the base. (LAB agreed tc this but the plan was not implemented except at Trinidad).

6. The third crew member on LAB's international flights should be a flight engineer who is a qualified mechanic.

Presently the flight engineer is a qualified pilot. NORTEAM's recommendation would have two advantages--a mechanic would be present at the termination of the flight to supervise any maintenance work required, and the number of pilots available for flight duty would be increased.

V. PROBLEMS ENCOUNTERED IN THE FULFILLMENT OF THE CONTRACT

1. Management changes

During the term of North Central's contract, there was a serious lack of continuity in management of LAB. In the two-year period, there were three different Presidents, four General Managers and significant changes in supervisory personnel.

2. Internal politics within LAB

The complexities of this problem are many and varied. The union leaders with the support of high Bolivian Government officials were able to remove any supervisors who were conscientious and exacting. This was the factor in the termination of the Superintendent of Operations, Capt. Juan Moreira, and the resignation of his assistant, Mr. Roger Guzman. Others had been removed prior to our arrival. Intimidation of supervision by the unions caused the supervisors to accept whatever the employees wanted to give by way of production, accuracy, and cooperation. This resulted in about 30-40% efficiency in production and the fostering of slow-downs and strikes.

3. Bolivian political situation

The periods of political strife within the country seriously interfered with NORTEAM's program for the rehabilitation of LAB. The general unrest, manifestations against the Government, general strikes, and the complete overthrow of the Government caused the loss of many weeks of work. During one short period of political unrest, there was over a week of non-productive labor, especially that portion of the work that required travel to locations outside of Cochabamba. This unrest also detracted from the productivity of the LAB employees not only because of time lost discussing the situations, but also because of the general distractions from their work.

The present way of life in Bolivia does not generate individual industry or initiative. There is a general feeling by the greater percentage of employees that they will be taken care of by the Government and good honest work on their part will not improve their lot or standard of living. The fact that the airline is Government-owned promotes the feeling that the Government will keep the airline going regardless of whether a profit is earned or not.

4. Strikes

There were five strikes and numerous threats of strikes experienced during the two-year contract period.

On October 4, 1963, shortly after the arrival of the NORTEAM in Cochabamba, the workers walked off the job two hours early because they had heard the payroll would not be ready. They were assured the money would be available at the end of the shift, and it was. But they still went home.

In February 1964, the workers threatened to strike over the matter of new coveralls but, fortunately, a supply was obtained from Brazil. Then, they shifted their attack toward Capt. Moreira, Superintendent of Operations, finally calling a strike on May 12, 1964, which was settled by the intervention of the Bolivian Minister of Labor. He came from La Paz and dismissed Capt. Moreira from his position.

On August 26, 1964, the union at Cochabamba staged a sudden three-hour strike in protest of the rumored dismissal of the General Manager-Administration.

The final one was the general strike throughout Bolivia on May 16 and 17, 1965, protesting the removal of Mr. Juan Lechin as the President of the Tin Miners Union and his exile from Bolivia.

5. Lack of funds

This was a constant problem. It was so bad that during most of the two-year period, NORTEAM was unable to obtain approval for even minor items involving small cash outlays. The shortage of funds was a very great disappointment to both LAB employees and NORTEAM. It resulted in the continuance of the "hand-to-mouth" condition that LAB had been working under for the last several years.

It hindered us in the purchase of parts, materials, and tools necessary for the maintenance of the aircraft. Without replacement parts and test equipment, good trouble-shooting procedures could not be set up. Without materials, repairs and overhauls could not be made, and without the proper tools, production could not be increased.

Improvement could not be made in the condition of the runways. It was not possible to increase the number of lighted runways within Bolivia. This was a very large deterrent to increasing the daily utilization of the aircraft. If lights could have been installed at Cochabamba alone, the daily system aircraft utilization could have been increased by one hour.

Without funds, it was impossible to rehabilitate the traffic and sales offices and passenger ticket areas.

6. Language barrier

This was an especially formidable obstacle in all technical departments where even a proficient translator had problems with technical terms. The exchange of ideas, discussion of problems, and plans for correction were difficult to accomplish due to the lack of knowledge of the local language.

7. Excessive holidays

The numerous holidays in Bolivia also cost many productive man days. As a comparison in this respect, North Central Airlines employees have seven paid holidays during the year and two hours off for voting in State or National elections. LAB employees get 31 holidays a year. If there is an election (as in 1964), they get an additional week off for parades, campaigning, and other such activities.

8. Excessive vacations

The method of accruing and taking of vacations caused many personnel problems in scheduling work. As an example of this, when NORTEAM arrived at LAB, they found that some 562 employees were entitled to 23,121 days of accrued vacation. Many employees had not taken their vacations, claiming they were "indispensable". Questioning of management resulted in no definite answers except that employees were supposed to take vacations, unless they had a certificate from their supervisor allowing them to accumulate vacation time. Some employees had not taken a vacation for seven years and accumulated up to 240 days. In view of the excess of personnel, in NORTEAM's opinion, the indispensability excuse was not acceptable.

9. Lack of communications

The lack of communication facilities (telephone, teletype and radio) within Bolivia made dissemination of information and supervisory assistance for the operation very difficult.

10. Bolivian customs laws

This was a constant source of trouble and delay. After waiting for weeks or even months for urgently needed parts and materials, they finally would arrive in Bolivia only to be tied up in Customs for various lengthy periods of time until someone released them.

11. Delay in Aircraft Evaluation Study

This study was about one year late because the individuals assigned to the study were constantly being taken off the project to do something else, or were allowed to go on vacation during the most critical time of the study.

12. Failure to use new job descriptions

Early in 1965 LAB management accepted NORTEAM's reorganization plan for the company, at least in principle. However, the failure of LAB management to implement the use of the new job descriptions detracted substantially from the effectiveness of the reorganization program. The months of hard work done by the NORTEAM on this project will be wasted unless pressure is brought to bear on LAB management to implement the whole project.

C. RECOMMENDATIONS FOR THE FUTURE

A. MANAGEMENT-ADMINISTRATION

1. The most important recommendation that could be made is that all rejected recommendations or those not implemented for one reason or another be considered very carefully by LAB management for their future welfare.
2. In order for the company to function properly, it is essential that management be willing to delegate authority to the airline's supervisory personnel along with the responsibility for performing their jobs.
3. There have been numerous cases where certain employees were promoted or given pay increases on the basis of who they knew instead of how well they could perform their jobs. This type of internal politics should be eliminated. Promotions and pay raises must be made on the basis of merit.

B. FINANCE AND ACCOUNTING

Accounting Section

1. Implementation of Rejected Recommendations

The prime recommendation is that all items which have been rejected by LAB be reviewed and implemented in the manner suggested by the NORTEAM.

2. Reconciliation of Government Accounts

For a year and a half, NORTEAM tried to get the Government of Bolivia to agree to offsetting LAB's debt to the Government and Banco Central against the Government debts to LAB. LAB management was in favor of this, but was not effective in getting it accomplished. While negotiating for the 1965 subsidy, we emphasized the necessity of reconciling these accounts. The Government then stated they would do this, and six months later, the auditing of these accounts began. It is not known if the reconciliation has been accomplished to date. If not, LAB should press for this immediately.

3. Training in New and Modern Procedures

LAB should set up a program whereby their finance and accounting personnel would be acquainted with new equipment and procedures. This can be done by supplying subscriptions to finance and accounting magazines, by having personnel attend seminars, by providing for training in other companies

using newer equipment and procedures, and by providing a training program conducted by competent personnel within the company.

4. Establishment of Credit Plan

Although we realize there is little or no credit available for most Bolivians, we feel an attempt should be made by LAB to go into a credit program. We tried to work out a credit program such as "Fly Now - Pay Later". This was a plan whereby an insurance company or other agency would be the lender and LAB would receive their monies within 30 days at no risk. Although we had numerous inquiries, we were unable to sell this program. It is possible that at a future date this can be accomplished even if a slight modification is necessary.

Purchasing and Stores Section

1. It is, in our opinion, necessary that management follow the suggestions made for the control of purchasing parts, materials and supplies. Without proper control, LAB will again begin to overstock slow-moving items and understock the fast-moving items. This, of course, will lead to the possible grounding of aircraft and resulting loss of revenues to LAB.
2. The preparation of a LAB parts and supply catalog would be very helpful to Maintenance and Stores. If all parts in stock were catalogued, the Maintenance people would know exactly what they wanted when requisitioning from Stores. The Stores personnel would be able to locate the items much easier and faster. This would, in many cases, reduce the number of long maintenance delays.
3. For a stricter control on avgas and commercial gasoline, it is suggested that periodic checks be made on the YPFB meters at La Paz, Cochabamba, and Santa Cruz. This is necessary since there is no Governmental regulatory body in Bolivia like our U. S. Weights and Measures Bureau. In a check of these YPFB meters, one of them was found to be inaccurate. This becomes costly on LAB's volume of gasoline at 36¢ a gallon.
4. It is essential that, in accordance with the open line of credit arranged by NORTEAM, LAB resume its schedule of regular payments to U. S. suppliers in order to assure a continuance of the receipt of parts from prime sources

of supply.

C. TRAFFIC AND SALES DEPARTMENT

1. Further Implementation of Reorganization Plan

The reorganization of this Department should be completed as outlined, using the manning tables and job descriptions. With an expanded Traffic and Sales Department, the needs of the traveling public can be more fully served by LAB.

2. A Continuing Training Program

One of the shortcomings in the LAB operation seems to be the complete isolation of its employees from the outside world and from modern day airline techniques and practices. NORTEAM feels that a possible solution to this problem is a continuing program of exposing LAB supervisors to the operations of other air carriers outside South America.

At the same time, many supervisors can neither read nor speak English. Since most industry publications, both in the United States and Europe, are published in English, it would be advantageous for supervisors to learn this language.

3. Communications System Improvement

The airline needs a more modern and up-to-date communications system. Under the present method all messages (including reservations) are handled via CW Radio (short wave-key system). While this method may seem adequate, we are reasonably confident that because of its extreme slowness, communications are being lost or are received too late to be acted upon. It is important that LAB develop and learn to maintain a modern radio teletype system to service La Paz, Cochabamba, Santa Cruz, Trinidad, Riberalta, Guavaramerin, and Sucre. We suggest this system since land lines are presently out of the question.

4. Those recommendations that were previously rejected should be reconsidered and implemented.

D. FLIGHT OPERATIONS DEPARTMENT

1. Airport Navigational Equipment Installation

The Government should install an improved navigational aid system at LAB airports in order to improve flight performance and thereby increasing reliability and public confidence in the carrier. This should include VOR installations at Cochabamba, La Paz, Santa Cruz, Trinidad, and Riberalta or Guayaramerin.

2. Continued Airport Development

   a. Santa Cruz - bituminous runway, surfaced taxi ways and ramp areas, and runway lights

   b. Trinidad - hard-surface runway, ramp and taxi ways and runway lights

   c. Sucre - runway extension and grading

   d. Tarija - filling and grading runway

   e. Camiri - lengthening runway

   f. Guayaramerin - 3" gravel surface

   g. Riberalta - 3" gravel surface

   h. Cochabamba - resurfacing and lengthening of SE-NW runway and runway lights

3. Acquisition of Turbine-Powered Aircraft for Passenger and Cargo Service

4. Periodic Employment of Flight Operations Specialists

   a. If new aircraft are acquired:

      (1) Instructor pilot should be hired to qualify LAB supervisory and instructor pilots.

      (2) Operations specialist should be hired to assist in establishing operating criteria, (gross weights, fuel loads, etc.)

      (3) Outside check pilot should be brought in once a year to conduct proficiency checks on all captains.

b. If no new aircraft are acquired, an outside check pilot (Spanish speaking) should be brought in once a year to act as a consultant on current operational problems and to review any flight operations changes made during the past year.

5. Adoption of Previous Recommendations

All recommendations that were made to LAB and not adopted should be reconsidered and implemented as soon as possible.

E. MAINTENANCE AND ENGINEERING DEPARTMENT

1. All recommendations made to LAB and rejected should be adopted.
2. More assistance is needed in the production planning section.
3. More personnel are required for trouble-shooting of discrepancies in Line Maintenance and the Electrical sections.
4. Advance planning is necessary for purchase of spare parts which will be needed for engine and airframe overhaul, so that they will be on hand when required.
5. Multilith printing equipment should be acquired for the production of manuals.
6. An advisor is needed to spend at least six months in the Accessories section to upgrade mechanics if and when new test equipment is received.
7. Top management should allow the supervisors to manage their own departments without interference.
8. Pressure should be brought on YPFB so their fuel and oil delivery service would be more dependable. Their poor service was the cause of many costly delays and cancellations.

VII. SUMMARY

A. REVIEW OF THE OVER-ALL CONDITION OF LAB AT THE BEGINNING OF THE CONTRACT

On the arrival of North Central's specialists in Bolivia, an initial investigation was made of the over-all condition of LAB. This study by the NORTEAM revealed that the entire company was in a deplorable state. Not only the physical plant of the airline but, even more important, the management of LAB left much to be desired. Almost everyone involved with the airline, directly or indirectly, had contributed to LAB's critical condition. This included the Bolivian government, the LAB Board of Directors, former LAB Presidents, present management personnel, supervisors, the labor unions, and the workers.

From an administrative standpoint, the day-to-day operation of the airline was complicated because there were two General Managers. Therefore, responsibilities were not clearly assigned to any one individual. Even the office of the President of LAB was separated from the company headquarters and located in La Paz instead of Cochabamba.

As a result of weak management, the labor unions were allowed to exert a strong influence on the airline's operation. This created a situation whereby supervisory personnel could not exercise their authority, for it was continually usurped or negated by the unions. In spite of substantial surplus personnel on the payroll, many jobs that should have been accomplished were not completed because of poor utilization of employees' time.

The financial condition of the company was beyond the critical stage. For all practical purposes, the airline was bankrupt, and no working capital funds were available. Cash controls and collections were so loosely handled that substantial funds were either stolen or not collected, in addition to the company's operating deficit. An immediate problem in the accounting department was that the company's records were ten months behind. The extent of LAB's financial losses and obligations could not even be determined until the records were made current.

In the area of flight operations, many pilot proficiency checks were long overdue and recurrent flight training was non-existent. Twin-engine aircraft were being operated at altitudes which violated every basic safety criteria. En route charts, airport approach charts, aircraft manuals, and mileage information were all either out of date or contained serious errors. Dispatching procedures were outdated and poorly administered. Little effort was made by LAB to adhere to flight schedules, and flight information was not readily available to the traveling public.

As for the Maintenance Department, the most apparent problem was that five of LAB's 12 aircraft were grounded for mechanical reasons. The engine overhaul shop was completing very few overhauls. Mechanical delays and cancellations were excessively high, and nothing was being done to correct this. Besides this, all the shops and facilities in the Maintenance Department were in an extremely rundown condition.

Because of these factors, and many more, LAB had lost the confidence of the traveling public. Most passengers used the airline's services only in emergencies or when they had no other choice.

B. PLAN FOR REHABILITATION OF LAB

After this review of the over-all conditions that existed, a program was outlined by NORTEAM for the revitalization and development of the airline. The general objective of this project was to develop LAB into a safe, reliable, self-supporting operation which would provide the maximum public transportation benefits, both domestic and international, to Bolivia.

To obtain the most efficient utilization of personnel, the airline needed to be reorganized into four operating departments--Flight Operations, Maintenance and Engineering, Traffic and Sales, and Finance and Accounting--and each of the department heads would report to the Vice President and General Manager. The General Manager would be responsible only to the President of LAB. In this way direct management

controls could be exercised over all personnel in the company. Better utilization of manpower would result, and some of the problems with the labor unions would be eliminated.

The rehabilitation plan for LAB also included a training program for all personnel, particularly in the managerial and supervisory category. Specialized technical training was immediately required in the Flight Operations Department. NORTEAM needed to update all of LAB's operating manuals at once since, in most cases, they were many years out-of-date.

North Central's program also called for changes in purchasing procedures to permit the most economical acquisition of materials and supplies. This was especially apparent in the purchase of aviation gasoline, where LAB was paying an exorbitant price.

In the financial area, funds were needed for the payment of past due bills, working capital, and the purchase of equipment and supplies necessary for an efficient airline operation. Tariff increases were required as soon as possible. The rehabilitation plan also included updating all accounting records and establishing an effective audit system. All payments would then be centralized in the general office, and other internal controls would be maintained to eliminate fraud by company employees.

To restore public confidence in LAB and develop a favorable corporate image, the appearance of the company's aircraft and facilities needed to be improved, as well as the personnel who come in contact with the passengers. However, of primary importance in revitalizing LAB and winning public confidence was an improvement in the company's safety record and the establishment of a reliable schedule operation.

C. PROBLEMS ENCOUNTERED IN THE FULFILLMENT OF THE CONTRACT

One of the most acute problems that the NORTEAM encountered in its efforts to furnish assistance to LAB was the instability of the Bolivian Government. During the two-year contract period, the airline had three different Presidents and four General Managers. Besides this, the revolution of November 1964 brought about a change in the head of the Government itself and many new Government officials were appointed. Another result was the loss of thousands of hours of

LAB employee time because of the widespread political unrest, manifestations against the Government, and general strikes.

The action of the labor unions in management matters was a continuing problem. The union leaders exerted a great deal of influence over the workers to the detriment of the company. In some cases, supervisors could not exercise disciplinary action without interference from the unions.

The continual lack of funds caused many difficulties in accomplishing North Central's program to rehabilitate LAB. However, this was overcome in part by funds received from the United States and Bolivian Governments and also from gains in passenger and cargo revenues generated by tariff increases and improved scheduling.

Another difficulty that NORTEAM members encountered in the project was the lack of cooperation by some of LAB's management personnel. Many projects that were begun as joint LAB/NORTEAM ventures had to be completed by North Central personnel because LAB management would not allow the airline's supervisors to devote the time required to accomplish the projects. One example of this was the Aircraft Evaluation Study.

A great deal of time and effort was spent by all NORTEAM members in developing three different detailed loan applications to USAID/Bolivia for funds to be used in the rehabilitation of LAB. However, none of the applications was approved by USAID. We understand one reason for this action was the Bolivian Government and LAB had not fully implemented the "Five Point Program", a condition precedent to the granting of the loan.

D. RECOMMENDATIONS REJECTED

Many recommendations made by North Central technicians were rejected by LAB management. Some of these were not carried out because of lack of money. If and when the necessary funds are available, NORTEAM strongly urges that these recommendations be reviewed and put into effect.

Those rejected for other than financial reasons should be carefully analyzed by LAB management. NORTEAM members believe that the implementation of these recommendations is essential to make LAB a vital and efficient airline--one that will contribute to the economy of Bolivia.

E. ACCOMPLISHMENTS

The plan for the reorganization of LAB into four operating departments, with each department head reporting to the General Manager, was completed by the NORTEAM. (An Airport Administration department was also set up, but the eventual aim was to separate it entirely from LAB's operation by transferring it to the Bolivian Government.) The organization plan included job descriptions for all personnel. Although approved by the President of LAB and the Board of Directors, the plan was not implemented in its entirety by the General Manager.

A "Five Point Program", enumerating five actions essential to LAB's future, was developed by North Central personnel with the assistance of USAID and presented to the Bolivian Government by U. S. Ambassador Henderson for implementation. This plan included: (1) system tariff increases, (2) reduction in aviation gas prices, (3) transfer of aircraft and parts from State enterprises to LAB, (4) reduction of LAB personnel, and (5) regulation of scheduled and non-scheduled air carriers operating in competition with LAB. The first two points were accomplished in their entirety, the third and fourth points were completed in part, but no action has been taken on the last item.

As a result of the efforts of North Central's technical personnel and improved procedures which were introduced under their direction, substantial reductions in costs and increases in revenues were effected. The estimated annual savings to LAB should be approximately $950,000.

In the Finance and Accounting Department, one of the most important accomplishments was bringing all the accounting records up-to-date. With improved internal controls, the opportunity for fraud, pilferage, and theft was reduced

to a great extent in all phases of the airline's operation. Through the combined efforts of the NORTEAM, LAB management, and USAID personnel, substantial financial aid was obtained from the United States and Bolivian Governments. Without this money, LAB could not have continued to operate.

A great deal of attention was given to the Traffic and Sales Department of LAB. The tariff increases that were effected resulted in substantial additional revenues. Also, the many improvements made in LAB's schedule brought about a large increase in passenger and cargo business for the airline. A detailed market survey was completed by NORTEAM members, and this should be of assistance in future scheduling plans for LAB.

Many improvements were achieved in the Maintenance Department by the efforts of North Central's technicians. Under the guidance of NORTEAM, LAB's overhaul procedures were streamlined and modernized. Production rates in all shops were greatly increased. A Production Planning Section was established to schedule overhaul work more efficiently Because of improved supervisory coverage and better line maintenance, mechanical delays and cancellations were greatly reduced. The five aircraft that were grounded on the arrival of the NORTEAM in Bolivia were all placed in scheduled operation. No aircraft was out of service at the expiration of North Central's contract, with the exception of those scheduled for routine maintenance work.

A substantial amount of time was spent by NORTEAM in all phases of training of LAB personnel. In addition, time had to be expended in the preparation of new and up-dated manuals for all departments of LAB.

North Central's flight operations technicians spent most of their time training LAB's pilots in standardized and improved flying techniques. In addition, certain key LAB pilot personnel were selected and specially trained so they would be capable of continuing the flight check and transition training program established by the NORTEAM. A plan for better runways and navigational facilities was developed,

but implemented on a limited scale only because of the lack of funds. The results achieved by North Central's flight operations specialists can best be shown by LAB's improved safety record. There were no fatal accidents during the last 18 months of North Central's contract period although flight frequencies were increased and more passengers and cargo carried than for many years.

The most important accomplishment by NORTEAM was the outstanding improvement of LAB's image and the resultant restoration of public confidence in the safety and reliability of the airline.

ORGANIZATION PLAN

FOR

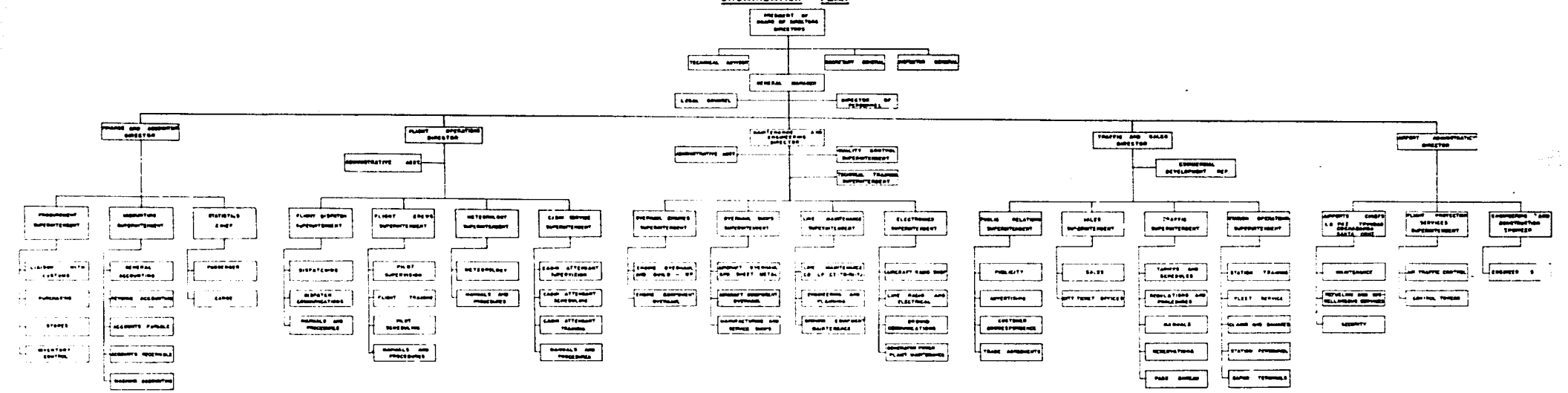
LLOYD AEREO BOLIVIANO

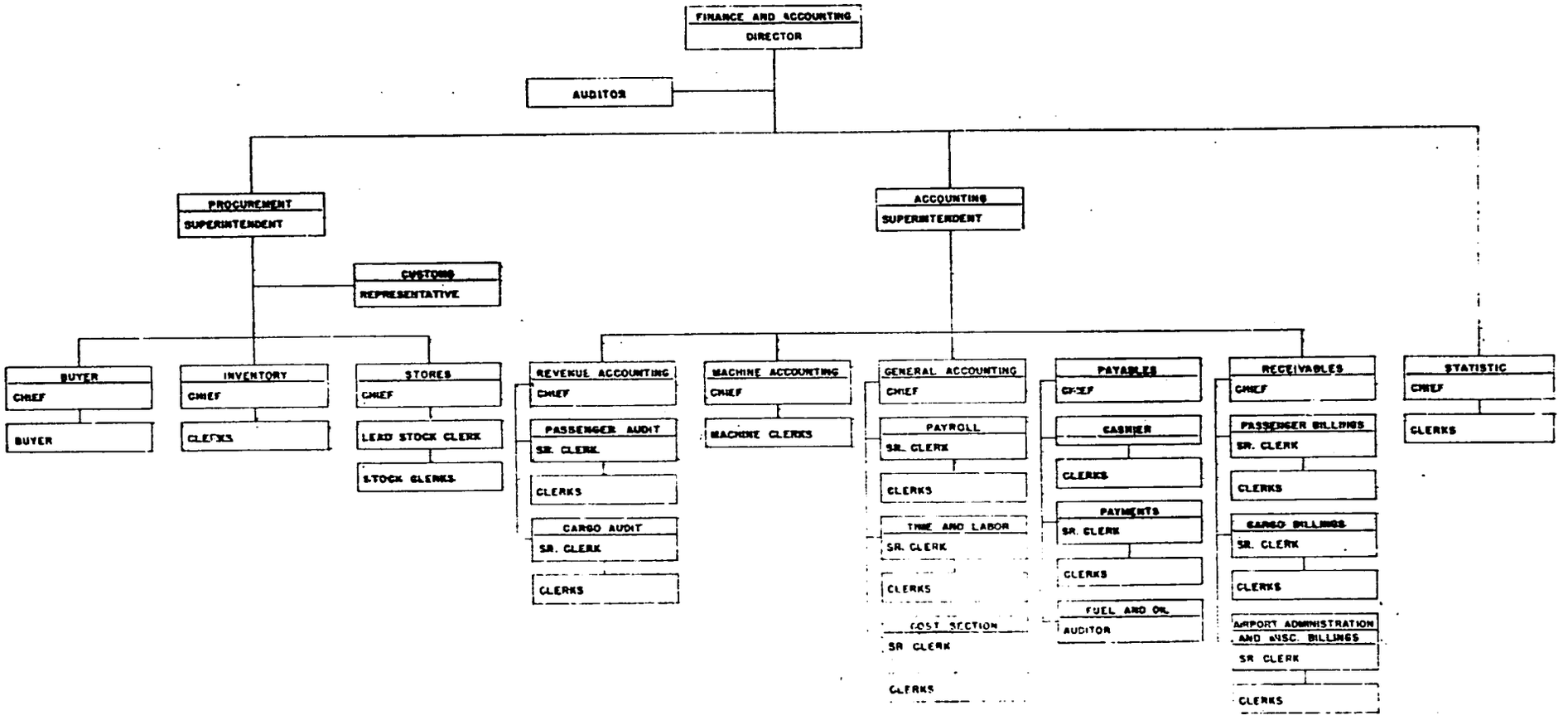
(Including Charts and Job Descriptions)

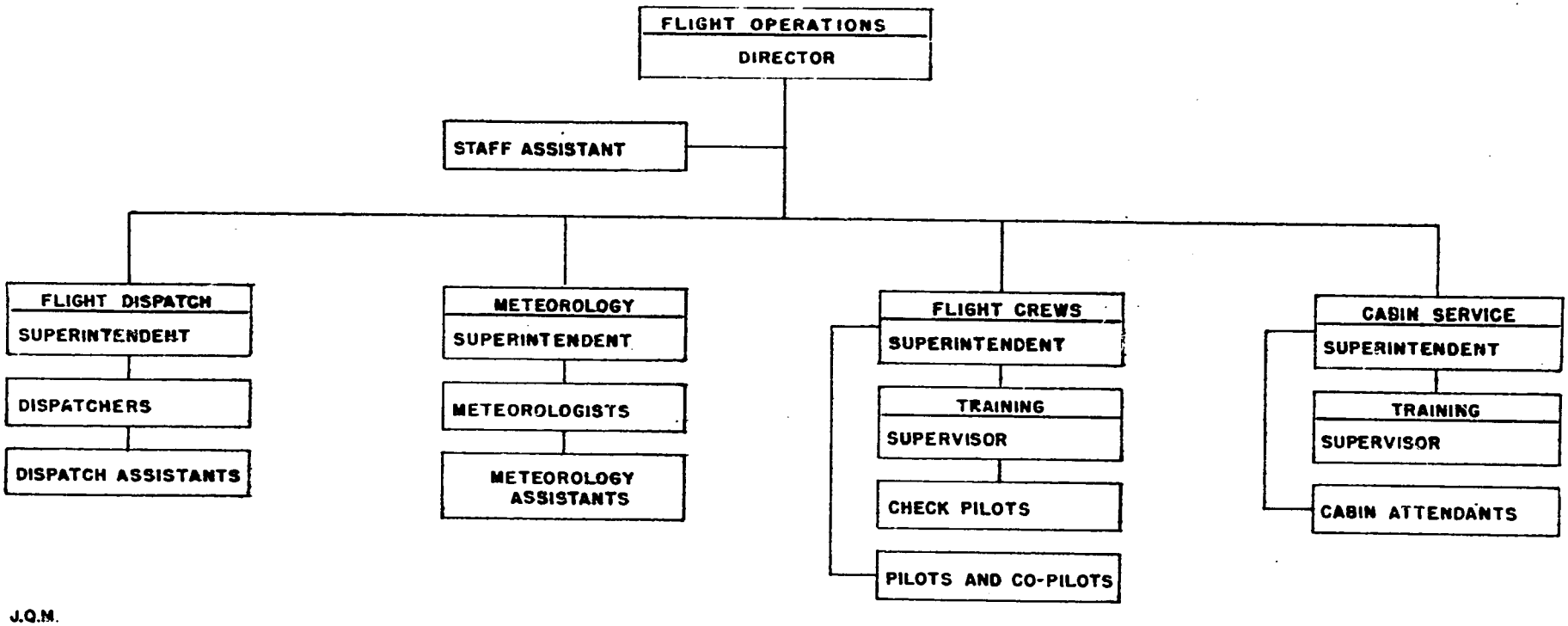
EXHIBIT I

LLOYD AEREO BOLIVIANO S.A.

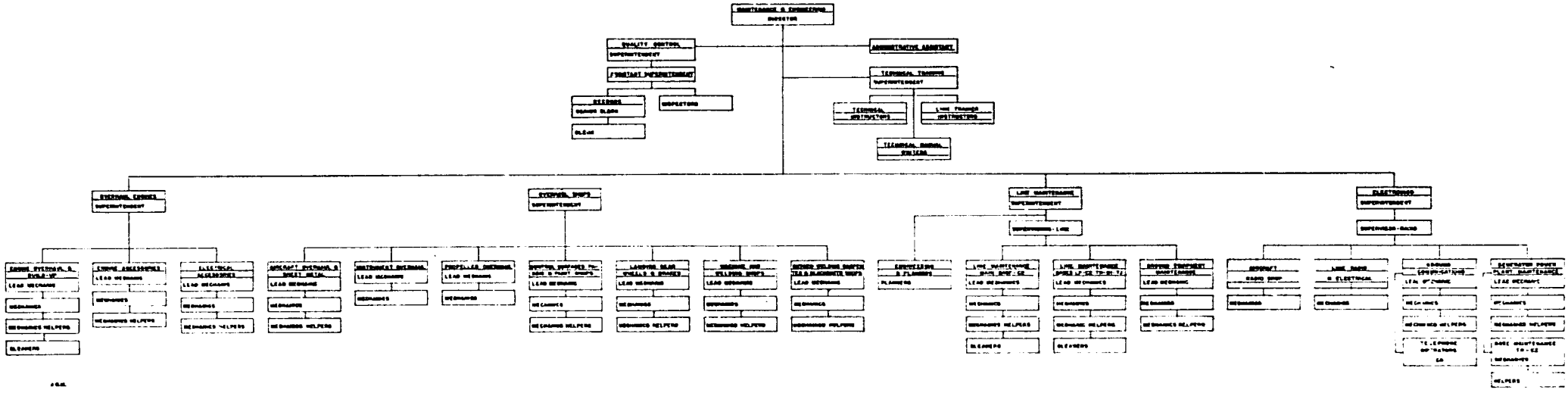
ORGANIZATION PLAN

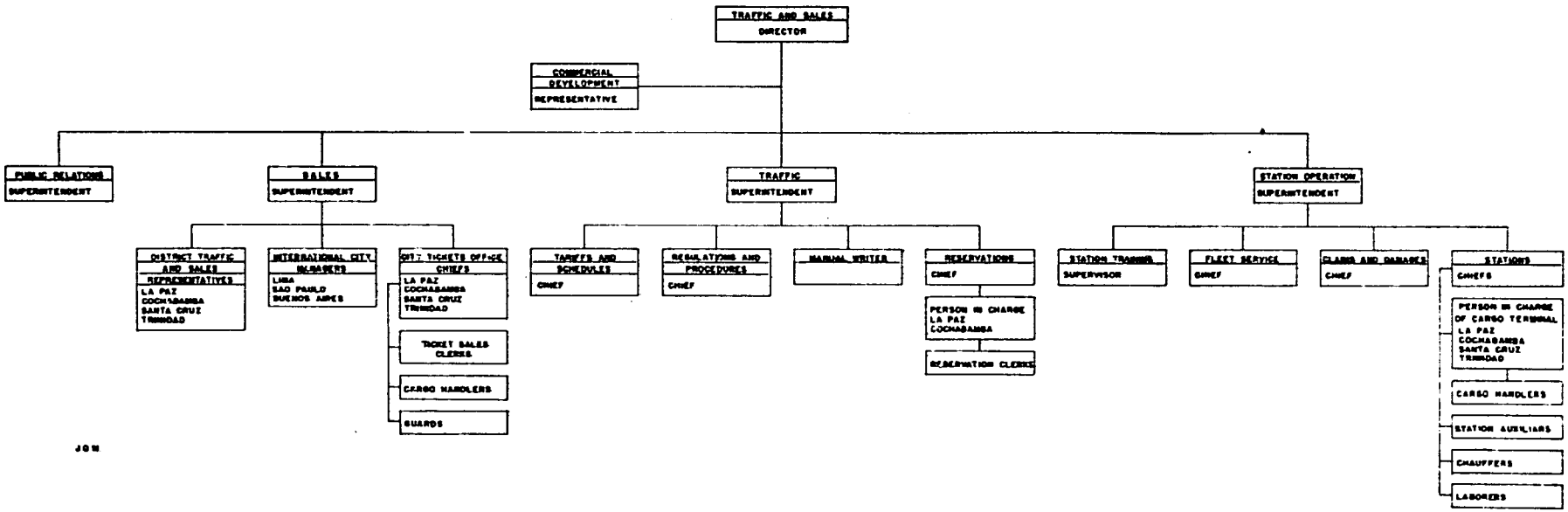



FINANCE AND ACCOUNTING
DIRECTOR
AUDITOR
PROCUREMENT
SUPERINTENDENT
CUSTOMS
REPRESENTATIVE
ACCOUNTING
SUPERINTENDENT
BUYER
CHIEF
BUYER
INVENTORY
CHIEF
CLERKS
STORES
CHIEF
LEAD STOCK CLERK
STOCK CLERKS
REVENUE ACCOUNTING
CHIEF
PASSENGER AUDIT
SR. CLERK
CLERKS
CARGO AUDIT
SR. CLERK
CLERKS
MACHINE ACCOUNTING
CHIEF
MACHINE CLERKS
GENERAL ACCOUNTING
CHIEF
PAYROLL
SR. CLERK
CLERKS
TIME AND LABOR
SR. CLERK
CLERKS
COST SECTION
SR CLERK
CLERKS
PAYABLES
CHIEF
CASHIER
CLERKS
PAYMENTS
SR. CLERK
CLERKS
FUEL AND OIL
AUDITOR
RECEIVABLES
CHIEF
PASSENGER BILLINGS
SR. CLERK
CLERKS
CARGO BILLINGS
SR. CLERK
CLERKS
AIRPORT ADMINISTRATION
AND MISC. BILLINGS
SR CLERK
CLERKS
STATISTIC
CHIEF
CLERKS

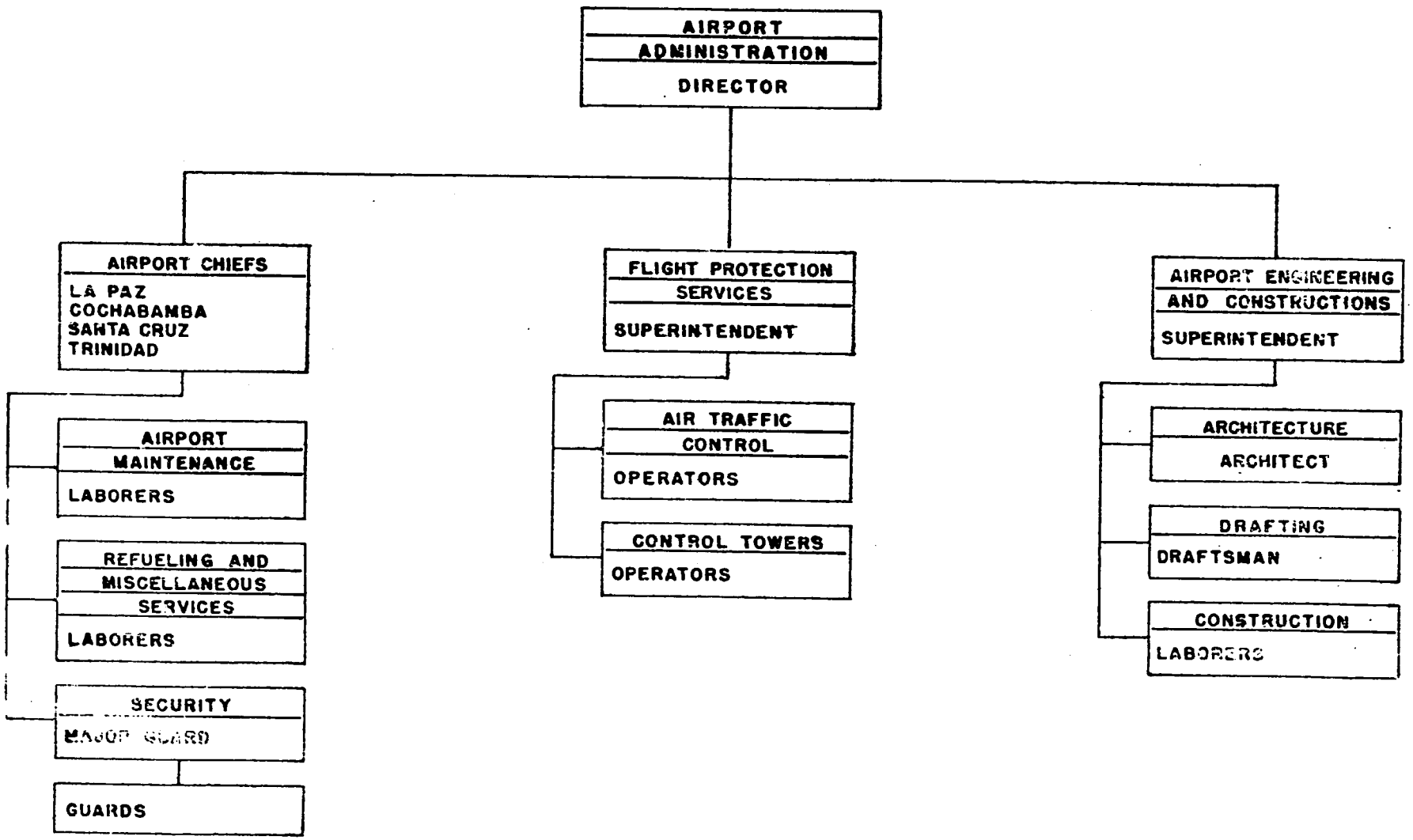

FLIGHT OPERATIONS
DIRECTOR
STAFF ASSISTANT
FLIGHT DISPATCH
SUPERINTENDENT
DISPATCHERS
DISPATCH ASSISTANTS
METEOROLOGY
SUPERINTENDENT
METEOROLOGISTS
METEOROLOGY ASSISTANTS
FLIGHT CREWS
SUPERINTENDENT
TRAINING
SUPERVISOR
CHECK PILOTS
PILOTS AND CO-PILOTS
CABIN SERVICE
SUPERINTENDENT
TRAINING
SUPERVISOR
CABIN ATTENDANTS

J.Q.M.




TRAFFIC AND SALES
DIRECTOR
COMMERCIAL DEVELOPMENT
REPRESENTATIVE
PUBLIC RELATIONS
SUPERINTENDENT
SALES
SUPERINTENDENT
TRAFFIC
SUPERINTENDENT
STATION OPERATION
SUPERINTENDENT
DISTRICT TRAFFIC AND SALES
REPRESENTATIVES
LA PAZ
COCHABAMBA
SANTA CRUZ
TRINIDAD
INTERNATIONAL CITY MANAGERS
LIMA
SAO PAULO
BUENOS AIRES
CITY TICKETS OFFICE CHIEFS
LA PAZ
COCHABAMBA
SANTA CRUZ
TRINIDAD
TICKET SALES CLERKS
CARGO HANDLERS
GUARDS
TARIFFS AND SCHEDULES
CHIEF
REGULATIONS AND PROCEDURES
CHIEF
MANUAL WRITER
RESERVATIONS
CHIEF
PERSON IN CHARGE
LA PAZ
COCHABAMBA
RESERVATION CLERKS
STATION TRAINER
SUPERVISOR
FLEET SERVICE
CHIEF
CLAIMS AND DAMAGES
CHIEF
STATIONS
CHIEFS
PERSON IN CHARGE OF CARGO TERMINAL
LA PAZ
COCHABAMBA
SANTA CRUZ
TRINIDAD
CARGO HANDLERS
STATION AUXILIARS
CHAUFFERS
LABORERS

JGW


AIRPORT
ADMINISTRATION
DIRECTOR
AIRPORT CHIEFS
LA PAZ
COCHABAMBA
SANTA CRUZ
TRINIDAD
AIRPORT
MAINTENANCE
LABORERS
REFUELING AND
MISCELLANEOUS
SERVICES
LABORERS
SECURITY
MAJOR GUARD
GUARDS
FLIGHT PROTECTION
SERVICES
SUPERINTENDENT
AIR TRAFFIC
CONTROL
OPERATORS
CONTROL TOWERS
OPERATORS
AIRPORT ENGINEERING
AND CONSTRUCTIONS
SUPERINTENDENT
ARCHITECTURE
ARCHITECT
DRAFTING
DRAFTSMAN
CONSTRUCTION
LABORERS

VICE PRESIDENT AND GENERAL MANAGER

1. Basic Function:

The Vice President and General Manager is responsible to the President and Board of Directors for the orderly and efficient organization of the various departments and the conduct of operations in a SAFE, EFFICIENT AND DEPENDABLE MANNER; presenting to the public at all times a first class appearance of both personnel and equipment.

2. Responsibilities and Authority:

a. (1) To purchase, acquire or obtain on option property, shares and titles related to the activities and interests of the company;

(2) to sign contracts, correspondence, private and public documents;

(3) to effect commissions and consignments of property;

(4) to employ, discharge or retire employees; to establish terms and conditions of employment; to submit to Board of Directors for approval annual budgets covering manpower requirements; to submit to Board of Directors list of candidates for supervisory positions; for foreign scholarships; submit monthly to the Board a list of employee terminations and social benefits paid;

(5) Secure prior approval of the Board with respect to foreign scholarships for employees involving expense to the Company;

b. To represent the companies before authorities: Judicial, administrative, agrarian, municipal, customs, police, corporations on institutions; to intervene as General Manager in requests, causes, petitions, claims, law suits either administrative or judicial; to present documents, affidavits; to swear, present witnesses in law suits; to mortgage; to sign pacts; to propose or answer; to accuse; to appeal; to renounce appeals and legal terms; to grant powers to third parties; to present plans and studies for the Supreme Government directly to the President of the Republic or through one of the Ministers; to solicit loans from the Central Bank or other organization with the prior consent and knowledge of the Board.

c. To collect, to receive monies, property, shares and other credits in payment of debts to the company, having all legal means to enforce collection; to sign receipts, liquidations and discharges.

d. To represent the company before customs, customs agents; having the power to sign, extend, to present manifests, policies, registers, import papers and recipts; to sign, endorse or cancel said policies either for export or import and obtain insurance via land, sea or air transport.

e. To open accounts in local or foreign banks, make deposits, to transfer to other banks, to sign, endorse, accept, collect, protest, transfer, pay, negotiate checks or money orders, letters of credit; providing all these documents have another legal signature. All foreign checks shall carry the endorsement of the General Manager, Director of Accounting and the designee of the Comptroller General of the Republic.

f. (1) To sign transport contracts in the most convenient manner. General Manager is authorized to obtain in the name of Lloyd Aereo Boliviano land concessions, water, roads, natural resources, right to occupy, to rent, lease; all for the benefit of the company.

(2) To study and present to the Board of Directors [illegible] new tariffs and domestic and international route extensions.

He shall obtain prior approval of the Board to sell, lease properties of aircraft parts; to obtain loans on properties through mortgages. Prior permission of the Board is required to loan or render guarantees on property, shares, stocks and valuables.

He is able to delegate responsibilities to other persons with the authorization of the Board.

For all cases not specified by this document, the General Manager can act with the authorization of the President of the Board of Directors.

TECHNICAL ASSISTANT - LAB

Responsibilities:

1. Must be qualified to assist in all important matters to the Departments of Operations, Maintenance, Inspection, Communications, AASANA, and Construction with regard to runways.

2. Use all possible means for an increasing utilization of flight equipment, in close cooperation with Traffic, Maintenance and Operations departments.

3. To supervise all flight operations, seeing that these procedures follow all safety regulations.

4. Be in close contact with the departments under his responsibility, checking any abnormality that may occur, cooperating with proper superintendents for corrective action.

5. To promote a greater coordination and cooperation among the departments of the company, specially among those involved directly in the development of flight operations.

6. Check continuously with Purchasing Division, to see the progress made on those requests for parts and materials to be used in company aircraft, thus being able to indicate Management which requests have priority.

7. Constantly inform Management on the progress made by the technical departments, and in case of any abnormality, suggest the proper action to be taken for a normal operation.

8. Familiarize himself on latest developments of industry, and study flight equipment for replacement of the present one, in accordance with the characteristics of our operations.

9. As requested by Management, he shall monitor any technical study (as the present Committee for Evaluation of new Flight Equipment).

ADMINISTRATIVE ASSISTANT TO GENERAL MANAGER

1. Basic Function:

   The Administrative Assistant is directly responsible to the General Manager

2. Responsibilities:

   a) Shall perform such tasks and duties assigned to him by the General Manager;

   b) Shall perform his duties in such manner that the office of the General Manager shall be relieved of administrative details.

3. Basic Relationship:

   a) Maintain liaison with all departments to improve and control inter Company relationships and responsibilities.

DIRECTOR OF FINANCE AND ACCOUNTING

1. Basic Function:

The Director of Finance and Accounting is responsible to the Vice President and General Manager for the efficient operation of the Accounting, Procurement and Statistic departments.

2. Responsibilities:

a. Supervise operations of the departments of General Accounting, Procurement and Statistics.

b. Supervise the field audit and collection section.

c. Prepare and/or review all contracts and leases.

d. Review all insurance policies and possibly negotiate new contracts and/or call for bids.

e. Prepare necessary information for the securing of loans or purchasing of equipment on long-term notes.

f. Coordinate all monthly statistics from Statistic Department and statements from General Accounting Department.

g. Prepare budget forecasts for the company and budget/actual comparative statements on monthly and year to date basis.

h. Review daily cash flow and approve all payments whether paid by cash or check.

i. Coordinate all necessary data for periodic reports to the Board of Directors and shareholders.

j. Handle all currency exchanges.

k. Coordinate year-end audits with Public Accounting firm.

l. To maintain all personnel records of the Finance and Accounting Department.

m. To attend to any and all other responsibilities which are related to this position.

n. Handle all correspondence pertaining to this position.

3. BASIC RELATIONSHIPS:

a. The Director of Finance and Accounting is administratively responsible to the Vice President and General Manager for the discharge of all the above responsibilities.

b. Works directly with other department heads to help improve and coordinate all financial matters.

c. He shall delegate the proper authority and responsibility to his section heads so that they may efficiently perform their duties.

FIELD AUDITOR

1. Basic Function:

The Field Auditor is responsible to the Director of Finance and Accounting for efficient auditing of all LAB installations and collection of all past due accounts.

2. Responsibilities:

a) Audit of all cash funds, ticket stocks, inventory stocks and Assets of the company.

b) Prepare reports on all audits and compare with General Office records the findings and report all discrepancies for review by the Director of Accounting and Finance.

c) Effect collection on all past due accounts. This to be coordinated with the Accounts Receivable Chief.

d) To handle all correspondence pertaining to this section.

e) To attend to all other responsibilities which are related to this position.

3. Basic Relationship:

a) The Field Auditor is responsible to the Director of Finance and Accounting for the discharge of all the above responsibilities.

b) To coordinate with other departments his procedures of auditing of LAB installations and findings.

c) To coordinate with the Accounts Receivable Chief the collection of past due accounts.

PROCUREMENT SUPERINTENDENT

1. Basic Function:

The Superintendent of Procurement is directly responsible to the Director of Treasury and Finance to assure complete control of all phases of purchasing and inventory control.

2. Responsibilities:

a) Select personnel for employment and advancement according to the criteria of the company.

b) Maintain close liaison with other departments of the company.

c) Direct activities of the Procurement Department.

d) Assist in maintaining personnel records.

e) Develop a training program for the various sections under his supervision.

f) Develop and implement procedures to expedite and improve the functions of the Procurement Department.

g) Keep abreast of all parts information disseminated by manufacturers and pass this information on to section chiefs.

h) Plan and requisition necessary equipment or improvements for the betterment of the department.

i) Assist in formulation of procedures and policies to attain maximum utilization of employees.

j) Supervise the maintenance of all parts catalogues and other reference material.

k) Prepare a purchase commitment statement weekly for circulation to management.

l) Keep abreast of all customs declarations.

m) Periodically audit purchase orders and invoices to ascertain that all costs are in accordance with published manufactures catalogues.

n) Analyze and approve all requests for overtime.

o) Keep all overtime to absolute minimum.

p) Assume the responsibilities of the chiefs of the Procurement section in their absence.

3. Basic Relationship:

a) The Superintendent of Procurement is administratively responsible to the Director of Treasury and Finance.

b) Maintain liaison with other departments to improve and control inter company relationships.

ACCOUNTING SUPERINTENDENT

1. Basic Function:

The Accounting Superintendent is responsible to the Director of Finance and Accounting for the efficient operation of the Accounting Department.

2. Responsibilities:

a) Coordinate all work of the Accounting Department through the Chiefs of the various divisions.

b) Prepare all statements and statistics as required from the accounts and records of the Accounting Department.

c) Review all major journal entries before they are posted to the account records.

d) Effects all transfer of funds from the station accounts to General Account.

e) Effects all changes necessary to make the operation of the Accounting Department more efficient.

f) Make a monthly review of all obligations and age LAB debts in order to keep Management posted as to obligations and payments. This will be coordinated with the Accounts Payable Chief.

g) To handle all correspondence relative to this position.

h) To accomplish any and all other responsibilities which are related to this position.

3. Basic Relationships:

a) The Accounting Superintendent is responsible to the Director of Finance and Accounting for the discharge of all the above responsibilities.

b) He will coordinate with other departments all matters which pertain to them in order to improve inter-department relations.

CUSTOMS REPRESENTATIVE

1. Basic Function:

The basic function of the Customs Representative is to work with the Bolivian Customs and an assigned customs broker to assure that Lloyd Aereo Boliviano is in accord with all customs regulations pertaining to shipments and purchases.

2. Responsibilities:

a) Process all customs documents in an efficient and expeditious manner to assure quick availability of all materials to the company.

b) Keep abreast of revisions or changes in Bolivian Customs laws.

c) Advise the Superintendent of Procurement and Chief Buyer of customs revisions that affect, or should be included, in purchase orders.

d) Assume the responsibilities of the Superintendent of Procurement in his absence.

3. Basic Relationship:

The Customs Representative is administratively responsible to the Superintendent of Procurement.

C H I E F B U Y E R

1. Basic Function

The basic function of the Chief Buyer is to assure economical provisioning of parts and materials to other departments of the company.

2. Responsibilities:

a) Develop and implement procedures to expedite and improve the functions of the Purchasing Section.

b) Direct and supervise the activities of the Purchasing Section.

c) Keep abreast of all part number changes, supercedures and new items, and advise other sections within the department.

d) Maintain current price and parts catalogues.

e) Assist in preparation of annual inventory.

f) Assist Superintendent of Procurement in the preparation of the weekly purchase commitment report.

g) Prepare reports as requested by Superintendent of Procurement.

h) Follow the procedures set forth in the Procurement-Stores manual to assure that buying will be done in a manner to provide a constant supply of parts and material.

i) Purchase best available material at the lowest cost.

j) Maintain close liaison with other sections in the Procurement Department.

k) Prepare and follow up on all claims for over-short or damaged materials as reported by Chief of Stores.

l) Compare invoice to purchase order to assure all costs are correct.

Chief Buyer (Continued)

3. Basic Relationship:

The Chief Buyer is administratively responsible to the Superintendent of Procurement.

INVENTORY CONTROL CHIEF

1. Basic Function:

The basic function of the Chief of Inventory Control section is to supervise the employees of that section in a manner to provide accurate, up to date inventory information to other sections of the Procurement Department and to other departments of the company.

2. Responsibilities:

a) Develop and implement procedures to expedite and improve the functions of the stores section.

b) Maintain inventory records accurately and legible.

c) Update minimum and maximum stock balances as usage warrants in accordance with procedures outlined in Purchasing-Stores manual.

d) Keep the Chief Buyer advised of erratic stock movements that would affect stock balances.

e) Supervise and assist in preparation of annual inventory in a manner to effect completion of the inventory on or before the 15th day of the month that follows the close of the fiscal year.

f) Closely compare invoice costs with past costs and alert the Chief Buyer of any discrepancy.

g) Investigate and determine the cause of constant or major stock shortages and advise the Superintendent of Purchasing of your findings.

h) Coordinate the activities and objectives of the inventory control section with other sections of the departments.

3. Basic Relationship:

The Inventory Control Chief is administratively responsible to the Superintendent of Procurement.

CHIEF OF STORES

1. Basic Function:

The basic function of the Chief of Stores is to supervise the stores section in a manner to provide quick, efficient parts and material supply to other departments of the company.

2. Responsibilities:

a) Maintain a clean, orderly stock room.

b) Develop and implement procedures to expedite and improve the functions of the stores section.

c) Direct and supervise the activities of the stores section.

d) Conduct an annual inventory of all parts in accordance with procedures set forth in the stores manual to effect completion of the inventory the last day of the fiscal year.

e) Maintain close relationship with other chiefs of the Procurement section and with other departments of Lloyd Aereo Boliviano to advise, or be advised, of any discrepancies of procedures that affect the efficiency of your department.

f) Prepare reports as requested by Superintendent of Procurement.

g) Advise Chief Buyer of all over-short or damage claims on carriers or vendors.

3. Basic Relationship:

The Chief of Stores is administratively responsible to the Superintendent of Procurement.

LEAD STOCK CLERK

1. Basic Function:

The basic function of the Lead Stock Clerk is to assist the Chief of Stores in the supervision of the Stores Department.

2. Responsibilities:

a) Maintain a clean, orderly stockroom.

b) Train the stock clerks to attain maximum efficiency.

c) Supervise the shipping and receiving function in addition to supervising all stock clerks.

d) Suggest to the Stores Manager methods of improving the stock functions.

e) Plan and coordinate annual inventory as outlined by Chief of Stores.

i) Accomplish frequent audits of stock balances to determine that inventory control records are accurate.

g) Advise Chief of Stores of any deficiencies in the stock control and suggest methods to rectify the deficiency.

h) Work in close cooperation with other departments of the company to assure optimum relations between the departments.

f) Assume the duties of the Chief of Stores in his absence.

3. Basic Relationship:

The Lead Stock Clerk is administratively responsible to the Chief of Stores.

REVENUE ACCOUNTING CHIEF

Basic Function:

The Revenue Accounting Chief is responsible directly to the Superintendent of Accounting for the efficient operation of this section.

Responsibilities:

a) Coordinate all work of the Revenue Accounting Section with the Sr. clerks of this section.

b) Prepare all Journal entries pertaining to the revenue sectio

c) Handle all correspondence regarding items handled by this section.

d) Supervise the distribution of ticket stock and control.

e) To handle any and all responsibilities which are related to this position.

Basic Relationship:

a) The Revenue Accounting Chief is responsible to the Superintendent of Accounting for the discharge of all the above responsibilities.

b) He will work with the chiefs of the other Accounting sectio in order to coordinate the work for an overall, efficient operation.

c) When necessary, work with other departments regarding repor or information directly effecting this section and any othe department.

MACHINE ACCOUNTING CHIEF

Basic Function:

The Machine Accounting Chief is responsible directly to the Superintendent of Accounting for the efficient operation of his section.

Responsibilities:

a) Reports directly to the Superintendent of Accounting.

b) Supervise and coordinate the work of the machine operators.

c) Advise chiefs of other sections as to time work must be in the hands of the machine operators in order to complete all posting for the month within a reasonable time.

d) Prepare monthly statements from account cards.

e) Program all applications which are to be done by the machines.

Basic Relationship:

a) The Machine Accounting Chief is responsible to the Superintendent of Accounting for the discharge of all the above responsibilities.

b) He will work with the chiefs of the other Accounting Sections in order to coordinate the work for an overall efficient operation.

c) When necessary, work with other departments regarding reports or information directly effecting this section and any other department.

GENERAL ACCOUNTING AND PAYROLL CHIEF

1. Basic Function:

The General Accounting and Payroll Chief is responsible directly to the Superintendent of Accounting for the efficient operation of his section.

2. Responsibilities:

a) Coordinate all work of this section with the Sr. clerks of the various divisions of the section.

b) Prepare all General Journal entries for posting to Account cards.

c) Assist the Superintendant of Accounting in preparing various statements and statistics.

d) Handle all correspondence pertaining to this section.

e) To handle any and all responsibilities which are related to this position.

3. Basic Relationship:

a) The General Accounting and Payroll Chief is responsible to the Superintendent of Accounting for the discharge of all the above responsibilities.

b) He will work with the chiefs of the other Accounting Sections in order to coordinate the work for an overall, efficient operation.

c) When necessary, work with other departments regarding reports or information directly effecting this section and any other department.

ACCOUNTS PAYABLE CHIEF

1. Basic Function:

The Accounts Payable Chief is responsible directly to the Superintendent of Accounting for the efficient operation of his section.

2. Responsibilities:

a) Coordinate all work of this section with the Sr. clerks of the various divisions of this section.

b) Prepare, in conjunction with the Superintendent of Accounting, an aged listing of all payables monthly.

c) See that all invoices are recorded as payables in the month in which they are received.

d) Review all payments made to insure proper authorization and promptness of payments.

d) Keep a current record of all funds available for payment of accounts.

f) Handle all correspondence pertaining to this section.

g) To handle any and all responsibilities which are related to this position.

3. Basic Relationship:

a) The Accounts Payable Chief is responsible to the Superintendent of Accounting for the discharge of all the above responsibilities.

b) He will work with the chiefs of the other Accounting Sections in order to coordinate the work for an overall, efficient operation.

c) When necessary, work with other departments regarding reports or information directly effecting this section and any other department.

ACCOUNTS RECEIVABLE CHIEF

1. Basic Function:

The Accounts Receivable Chief is responsible directly to the Superintendent of Accounting for the efficient operation of his section.

2. Responsibilities:

a) Coordinate all work of this section with the Sr. clerks of the various divisions of this section.

b) Prepare a monthly aged listing of all receivables.

c) Advise the Field Auditor of all accounts which are past-due in order to effect collection.

d) Insure proper monthly billings reflecting amounts due LAB. (In cases where necessary an itemized statement of all open items from previous months.)

e) Handle all correspondence pertaining to this section.

f) To handle any and all responsibilities which are related to this position.

3. Basic Relationship:

a) The Accounts Receivable Chief is responsible to the Superintendent of Accounting for the discharge of all the above responsibilities.

b) He will work with the chiefs of the other Accounting sections in order to coordinate the work for an overall, efficient operation.

c) When necessary, work with other departments regarding reports or information directly effecting this section and any other department.

STATISTICS CHIEF

1. Basic Function:

The Statistics Chief is responsible to the Director of Finance and Accounting for the efficient operation of the Statistics Department.

2. Responsibilities:

a) Coordinate all statistical work of this section.

b) Prepare timely monthly statistical reports on passengers, car etc.

c) Have prepared a daily report of passengers carried, miles scheduled and flown, performance factor, etc.

d) Handle all correspondence pertaining to this department.

e) Coordinate plane hours flown with the Maintenance Department in order to insure accuracy of figures.

f) Prepare special statistical reports as may be required for various needs of the company.

g) To attend to all other responsibilities which pertain to this Department.

3. Basic Relationship:

a) The Statistics Chief is responsible to the Director of Finance and Accounting for the discharge of all the above responsibilities.

b) Works directly with other departments to coordinate all Statistical material which is derived from information of the other departments.

DIRECTOR OF FLIGHT OPERATIONS

1. Basic Function:

The Director of Flight Operations will be responsible to the General Manager for all matters relative to Flight Operations. His primary functions will include all those required to insure that flight operations are conducted with the highest possible degree of safety, reliability and efficiency.

2. Responsibilities:

The Director of Flight Operations will be responsible for:

a. The operation of all aircraft owned or operated by the Company and to effect supervision which will insure that all such operation is conducted in accordance with current regulations and manuals.

b. Maintaining an effective flight dispatching department.

c. Maintaining a reliable meteorological department.

d. Efficient management of the flight department offices so that all correspondence, bulletins, operational information, manual statistics and records are properly handled.

e. The publication and maintenance of an operations manual. He will assure that this manual is consistent with industry standards and that the procedures, instructions and regulations contained therein are used by operations personnel.

f. Maintaining a system of employment, screening and training so that his various departments are adequately staffed with qualified personnel.

g. Maintaining a uniform system of discipline for all his personnel.

h. Maintaining an effective coordination with other department heads.

i. Keeping himself and his supervisory personnel current on latest developments pertinent to airline operations so that his department is an authorative source of information, guidance and advice.

3. Basic Relationships:

a. The Director of Flight Operations is responsible to the General Manager for fulfilling the obligations of his office and energetically promoting the success of the airline.

b. As the senior representative of the Operations Department he will keep the General Manager well informed on the status of his department and its immediate needs. He will also advise as to future requirements and assist, as necessary, in the planning involved.

c. He will maintain a relationship with the DGAC and other outside agencies or companies as required to promote the safety and efficiency of the company operations.

d. He will maintain a close working relationship with his department supervisors and monitor their performance.

e. He will also promote a team effort philosophy by working harmoniously with other department heads.

f. He shall delegate the proper authority and responsibility to his supervisory personnel so that they can efficiently perform their duties.

STAFF ASSISTANT - FLIGHT OPERATIONS

I. Basic Function

The Staff Assistant is responsible to the Director of Flight Operations for all duties assigned by this description document and other duties as directed by the Director of Flight Operations.

II. Responsibilities

Through the authority delegated by the Director of Flight Operations he will be responsible for the following:

1. He will keep himself highly informed on all regulations and procedures, both domestic and international, concerning airline operations.

2. He will be available as a technical advisor on regulations and procedures to the Director of Flight Operations and other personnel, both within and without the Department.

3. He will coordinate technical matters concerning flight operations between D.G.A.C., other governmental agencies and the company.

4. He will maintain a technical library of the latest available regulations, procedures, techniques, specifications and other reference material for use by personnel of the Flight Operations Department.

5. He will maintain a close liason with other interested departments and agencies in all matters concerning navigation facilities, airport facilities, communications and other items concerning flight operations.

6. He will keep Jeppeson & Co. informed by the most expeditious means possible all changes noted in paragraph #5 so as to have the latest information available in our navigation manuals.

7. He will maintain the Operations Manual in a current condition making certain that all changes to the operation required by new or changed regulations are included.

8. He will assist the Flight Training Supervisor, the Cabin Service training Supervisor and other training personnel as necessary to furnish instruction on those subjects he is most qualified to teach. He will also recommend subject matter to be included in training programs to be carried out by the training supervisors.

9. He will recommend the establishment, and/or assit in the establishment of procedures and policies which will secure the safest, most efficient operation at the most reasonable cost.

10. He will carry out other duties as requested by the Director of Flight Operations.

STAFF ASSISTANT - FLIGHT OPERATIONS (Continued)

III. Basic Relationships

The Staff Assistant is responsible to the Director of Flight Operations for the discharge of all responsibilities delegated above.

He works with the chiefs of the four divisions within the Flight Operations Department to aid in improving and coordinating all functions.

CHIEF DISPATCHER

Basic Function:

The Chief Dispatcher will be responsible to the Direct of Flight Operations for the safe and efficient dispatching of all company flights and for effective management of the Flight Dispatching Department.

Responsibilities:

The Chief Dispatcher will be responsible for:

1. Maintaining the Dispatching Department at the proficiency level required to fulfill its obligations toward attaining the desired degree of safety, efficiency and reliability in all flight operations.
2. Supervision of all Flight Dispatching personnel.
3. Monitoring the flow of information essential for dispatching.
4. Preparation of daily flight operation reports.
5. Maintaining a system of record keeping for personal files, correspondence, training data, bulletins and statistical information.
6. Maintaining a training program which will improve the proficiency of all Dispatching personnel.
7. Monitoring the performance of his flight dispatchers and the progress of all flights.
8. Taking prompt action whenever a critical situation arises and exercising emergency authority as

required.

III. Basic Relationships:

1. The Chief Dispatcher is responsible to the Director of Flight Operations for all the duties and responsibilities delegated to his office. He will keep the Director of Flight Operations routinery informed on the status of the daily operations and immediately notify when any operation becomes non-routine.

2. In the absence of the Director of Flight Operations, he will consult, as required, with the next in Line Flight supervisor who is available.

3. He will be coordinated with other depaftments so as to minimize the impact of any non-routine operations and to promote over-all efficiency.

4. He will maintain a close relationship with the Chief Pilot's office so as to insure crew coverage for routine and non-routine trips.

5. As a senior representative of the Flight Operations Department and having an intimate first hand knowledge of day-in, day-out operations he will be alert to detect and promptly call attention to anything that might effect the efficiency or safety of the operation.

CHIEF PILOT

I. Basic Functions

The Chief Pilot will be responsible to the Director of Flight Operations for all the duties and responsibilities delegated to his office.

II. Responsibilities

Through authority delegated by the Director of Flight Operations the Chief Pilot will be responsible for:

1. Providing competent aircrews for company owned or operated aircraft.

2. Maintaining a system for scheduling Captains and Co-pilots that is consistent with legality, fairplay and efficiency.

3. Supervision of the pilot group. The supervision will be directed toward maintaining a high degree of discipline and morale within this group.

4. Direct supervision of check pilots.

5. Maintaining a training program which will adequately qualify pilots and co-pilots for their respective duties and responsibilities.

6. Maintaining a recurrent training program designed to continuously upgrade the proficiency of the pilot group.

7. Maintaining a system of record-keeping which will include personal files, proficiency checks, training, upgrading, bulletins and correspondence.

8. Maintaining a system for implementing new procedures, procedural changes and for the dissemination of information pertinent to the pilot group.

9. Submitting payroll advice to the accounting department through the Director of Flight Operations.

10. Arranging for suitable lay-over accommodations.

11. The publication and revision of all aircraft manuals required by the aircrews.

12. Requisitioning uniforms and other company furnished material for the aircrews.

III. Basic Relationships

1. The Chief Pilot is responsible to the Director of Flight Operations for the duties and responsibilities delegated to his office.

2. He will maintain an effective relationship with the pilot group through personal contact, correspondence, bulletins and regularly scheduled meetings.

3. He will work with the scheduling committee and advise them as to whether a proposed schedule can be legally and efficiently flown.

CHIEF PILOT (Continued)

4. He will maintain coordination with the Flight Dispatching Department so as to minimize the impact of non-routine operations and to assist in upgrading the safety and efficiency of all flight operations.

5. He will maintain a close working relationship with the Director of Flight Operations in order to facilitate the implementation of policies and procedures. He will also inform that office of any immediate or potential problems and be alert to lend his operational experience for the benefit of the department.

6. He will also coordinate with other supervisors for the benefit of the over-all operation.

CHIEF METEOROLOGIST

I. Basic Function

The Chief Meteorologist will be responsible to the Director of Flight Operations for the maintenance and development of an effective meteorological department.

II. Responsibilities

The Chief Meteorologist will be responsible for:

1. The preparation and dissemination of weather maps, forecasts, weather analysis and sequence reports that are required for the reliable dispatching of all flights.

2. Briefing the Flight Dispatchers on all weather factors relative to Flight Operations.

3. The supervision of Meteorological Department personnel.

4. The recurrent training of Meteorological parsonnel.

5. The training of weather observers that are required to complete an effective reporting network.

6. The requisitioning of equipment necessary to maintain an effective weather reporting network.

7. The publication and maintenance of a meteorological manual which is suitable for use as a procedures manual and a training guide.

8. Maintaining meteorological equipment in good working order as well as an inventory of this equipment.

9. Keeping himself and his personnel current on weather service developments.

10. Maintaining a record of weather data required for statistical purposes.

11. Maintaining a system of record keeping for personal files, correspondence, training and bulletins.

III. Basic Relationships:

1. The Chief Meteorologist will be responsible to the Director of Flight Operations for providing a reliable meteorological service.

2. He will work closely with the Dispatching Department, keeping them informed on weather developments throughout the operating period.

3. He will maintain a relationship with other meteorological services so as to improve the reliability of weather information for company operations and to aid in the development of a continent network.

4. He will be alert to detect any impending hazardous weather conditions and issue such warnings. As required to minimize danger to Company property and personnel. He will also, in the interest of building good will and as a public service, maintain a relationship as required to pass on such warnings and information to outside agencies and the general public.

CHIEF CABIN ATTENDANT

1. Basic Function:

   a) Establish minimum education, minimum and maximum physical appearance, and experience requirements for all Cabin attendants and monitor compliance with thos requirements.

   b) Provide LAB with efficient, well trained cabin attendants.

   c) Develop and maintain attractive uniforms for all cabin attendants and monitor compliance with company regulations in relation to uniform appearance.

2. Responsibilities:

   a) Develop and supervise a training and retraining program for all Cabin Attendants for their respective duties and responsibilities.

   b) Selection fo competent personnel according to established company standards.

   c) Maintain a system of scheduling Cabin Attendants that is consistant with company and Government regulations, fair-play and efficiency. Monitor the procedure so that no Cabin Attendant has knowingly violated any company or Government regulation.

   d) Make regular check rides to monitor the efficiency of the Cabin Attendants in passenger service techniques, attention to the general comfort of the passengers, appearance, etc. taking written notes and making a written report which will become part of the personal file of the Cabin Attendants.

e) Supervise the cabin attendants as a group, keeping them well informed on current procedures, industry trends, company and Government regulations.

f) Take the necessary steps to insure that all cabin attendants receive proper uniforms.

g) Keep up to date personnel records on all cabin attendants which will include records of check rides, training received, disciplinary action, etc.

h) The publication and revision of the Cabin Attendant manual.

i) Hold periodic meetings with cabin attendants designed to give them an opportunity to make suggestions on how to improve service to the general public, improve safety procedures, etc. and to receive information on new procedures and other information pertinent to cabin attendants.

3. Basic Relationships:

a) The Chief Cabin Attendant is directly responsible to the Director of Flight Operations for the proper execution of the duties assigned.

b) The Chief Cabin Attendant should maintain a close working relationship with the Chief Pilot and the Chief of Cabin Service to insure that the passengers of LAB receive the best possible in-flight service.

c) The Chief Cabin Attendant will maintain close coordination with all LAB supervisors for the benefit of the overall operation.

JOB DESCRIPTION - AIRCRAFT DISPATCHER

1. Must possess a valid aircraft dispatcher's license.

2. Must be familiar with the route system of Lloyd Aereo Boliviano:

   A. Courses and distances
   B. Enroute terrain characteristics
   C. Unusual terminal area terrain characteristics
   D. Airports both Regular, alternate

3. Must have sufficient knowledge of the basic principles of the science of meteorology to enable him to assimilate the raw meteorological data, interpret meteorological maps and charts and the effects on airline operations. Must be familiar with the methods of collecting dissemanating operational weather data.

4. Must be familiar with the meteorological phenomena pecualiar to the routes and terminals served by Lloyd Aereo Boliviano:

   A. Enroute meteorological problems:
      a) Types and movement of weather fronts
      b) Winds aloft characteristics
      c) Thunderstorm and squall-line development
      d) Stratus layer development and characteristics

   B. Terminal area meteorological problems:
      a) Local low stratus conditions
      b) Local visibility restrictions
      c) Peculiar terminal area meteorological phenomena

5. Must have a practical working knowledge of the following characteristics of the aircraft of Lloyd Aereo Boliviano:

   A. Fuel capacity and rate of consumption
   B. Weight and balance limitations
   C. Gross weight computation and limitations there-to
   D. Speed and ceiling limitations
   E. Loading procedures
   F. Engine time restrictions, and routine maintenance requirements
   G. Emergency equipment

6. Must have a working knowledge of navigation and communications equipment:

   irborne equipment
   round station equipment
   requencies utilized
   raffic control procedures
) Enroute
   b) Terminal area
   E. Equipment limitations
      a) VHF navigation and communications
      b) HF navigation and communications
      c) Radar, ILS

7. Must be familiar with operations regulations:

   A. Company operating manuals
   B. Regulations of Bolivia - D.G.A.C.
   C. Regulations of other countries served by L.A.B.
   D. General ICAO regulations

8. Miscellaneous:

   A. Crew scheduling procedures
   B. General knowledge of customs procedures involving LAB's responsibility to the governments of the countries served by L.A.B.
   C. Basic company policies

CABIN ATTENDANT

Basic Function:

The cabin attendant will be responsible to the Chief Cabin Attendant for carrying out the duties on board the airplane that will provide a safe, comfortable and pleasant journey for our passengers.

Responsibilities:

Through the authority delegated by the Chief Cabin Attendant, he will be responsible for:

1) Providing unsurpassed service on board the airplane in an organized and effective manner.
2) Familiarizing himself with the safety and firs aid equipment and its operation on the airplane.
3) His duties as senior (or purser) and junior member of the flight crew as outlined in the manual and as designated in the training classes and attendant meetings.
4) Attending such training classes and attendant meetings when called and (in the case of not being able to attend) arranging another time to fulfill this obligation.
5) Knowing the contents of the manual, referring to it often, and keeping the bulletins and additions received from the Chief Cabin Attendant's office up to date.
6) Wearing only the regulation uniform as described in the manual with no alternation or exception.
7) Maintaining the uniform's appearance by sufficient cleaning and care.
8) Observing the dates of uniform changes from summer to winter according to the manual.
9) Maintaining the high standards of personal appearance-neatness, cleanliness and conduct always of utmost importance.

10) Carefully following instruction received from Chief Cabin Attendant.

11) Always checking in with Chief Cabin Attendant before his flight for information pertaining to flight and after flight to report any unusual or important happenings vital to the improvement of in-flight service or public relations.

12) Reporting for work on time (one hour before departure time) and on board airplane 1/2 hour before departure to check cabin appearance, supplies, and organize buffet.

13) Informing the Chief Cabin Attendant at least 3 hours before scheduled departure time when going on sick list.

14) Begin aware of certain landmarks, factos and points of interest on the trip, history of Bolivia and LAB.

15) Always ready, willing and informed enough to be able to assist the airsick passenger, mother and chiled, invalid, the aged in any way possible to make them more comfortable and to do that "special" something even when not called upon to give comfort, security and pleasure to the LAB passenger.

DIRECTOR MAINTENANCE & ENGINEERING

1. Basic Function:

The Director of Maintenance & Engineering shall be directly responsible for organizing a working force which will provide coverage for all phases of Maintenance and Engineering throughout the airline system, exclusive of Airport Engineering.

2. Responsibilities:

a. To formulate future plans and policies for the Maintenance & Engineering department which will produce results consistent with safety to personnel and equipment for operation of Lloyd Aereo Boliviano as a scheduled, clean, safe, economical and efficient airline.

b. Conduct meetings with the various Maintenance and Engineering section supervisors on schedule requirements, production, safety, economical operation of their respective shops and settle any disputes that arise within his area of responsibility.

c. To approve requisitions for manpower, new equipment, parts and materials.

d. Approve or disapprove plans of the various section supervisors in developing their respective sections.

e. Responsible to coordinate the budgetary requirements of the department.

f. To coordinate with the other departments and outside agencies in the overall problems which may occur.

g. To administer the training requirements for the Maintenance and Engineering department.

h. The Director of Maintenance and Engineering shall be the only person that can override the decisions of the Inspection Section on controversial issues involving the airworthiness of aircraft, knowing when he does so, he assumes the full responsibility of his actions.

i. To carry out the orders and policies of the Vice President-General Manager as directed.

j. Maintain a uniform system of discipline for all personnel in the department.

k. To motivate and coordinate the efforts of all section supervisors in promoting the best efforts possible in achieving the goals and responsibilities of the department.

3. Relationship:

a. The Director of Maintenance and Engineering is directly responsible to the Vice President-General Manager of the company.

b. He shall delegate the proper authority and responsibility to his section supervisors so that they may efficiently perform their duties.

CHIEF INSPECTOR

1. Basic Function:

The Chief Inspector is directly responsible for the Aircraft and Aircraft Engine Inspection program, and for determining that workmanship, materials and methods used conform to LAB standards and D.G.A.C. Regulations.

2. Responsibilities:

a) For the development, administration of all inspection activities in the Maintenance Department.

b) Joint responsibility in preparation of all forms used in inspection, line maintenance & overhaul, and the final approval of such forms.

c) To supervise and monitor the filing system of all aircraft and aircraft engine inspection records, maintenance work records as required by LAB and D.G.A.C.

d) Coordinate and interpret all manufacturer's and D.G.A.C. airworthiness directives, air carrier air regulations, etc. with the other sections of the department for compliance.

e) Joint responsibility in establishing and amending DGAC aircraft maintenance specifications.

f) Control receiving inspection of new and overhauled components and parts from all agencies.

g) Compile and issue monthly aircraft and engine utilization reports, engine failure reports and aircraft and engine status reports.

h) Program and schedule all routine aircraft and engine service checks.

i) Develop inspection procedures which shall be a guide or standard which shall govern all inspectors, so personal opinion alone will not be the basis for determining the airworthiness of the aircraft or its components or the work accomplished by the Maintenance personnel.

j) Maintain a uniform system of discipline for all personnel in the Inspection section.

k) Carry out the orders and policies of the Director of Maintenance and Engineering and to enforce company rules and regulations.

l) Keep current on airline industry developments as they pertain to improved inspection techniques and maintenance practices.

3. Relationship:

The Chief Inspector shall be directly responsible to the Director of Maintenance and Engineering.

INSPECTORS

1. Basic Function:

The Inspector will, through the use of initiative and good judgment, be responsible to make the decisions necessary with regard to airworthiness of aircraft and determine that all aircraft, maintenance work, materials and practices conform to the standards established by LAB and that all aircraft and components released for flight are airworthy.

2. Responsibilities:

a) Accomplish routine inspections on aircraft and engines according to LAB and DGAC procedures.

b) Inspect all repairs, replaced parts and installations on LAB aircraft as required.

c) Sign or initial as applicable the appropriate forms for areas inspected, repairs or installations inspected and approved.

Overhaul Inspection:

a) Accomplish overhaul/conversion inspection on aircraft according to LAB and DGAC procedures.

b) Inspect units and components overhauled or repaired by the Overhaul Section or Shops.

c) Coordinate with the Overhaul Supervisor as to inspection progress and advise of inspection status.

Shop Inspection:

a) Inspect units and assemblies overhauled, manufactured or assembled, as required by procedure.

b) Sbmit a monthly report of off-schedule component removals listing reason for removal and results of inspection after disassembly.

c) Affix serviceable tag to serviceable units after inspection and functional testing.

CHIEF TECHNICAL TRAINING

1. Basic Function:

The Chief Technical Training shall assist all sections of the Maintenance and Engineering Department in providing the Flight Operations Department with airworthy, on time aircraft by providing technical training and current maintenance manuals. He shall promote a through safety program, and shall coordinate and supply technical training on operation of mechanical and electronic equipment to other departments of the company.

2. Responsabilities:

a) Develop and administer technical training programs for all personnel on Maintenance, Operations, Traffic and Sales, and any other Department that may so request, based on LAB manuals and in accordance with LAB and D.G. A.C. rules and regulations.

b) Co-ordinate with all Department Directors and Chiefs of Sections on any training desired.

c) Indoctrination of new Maintenance employees covering Company policy and rules and regulations.

d) Conduct probationary tests and advise supervisors of results.

e) To keep records and progress of all individuals entering training.

f) To assist other Sections, with trouble-shooting of engines, airframes, electronic systems.

g) Train all ground personnel involved on aircraft operation on fire fighting procedures, aircraft emergency evacuation, refuelling and general ground handling.

h) Co-ordinate and conduct technical training, including emergency procedures, on the aircraft, engines and systems for air crew members, when and where necessary.

i) Provide Flight Operations Department with Link Trainers and conduct Link instruction to all flight crew members.

j) Supervise, compose, edit and issue information for technical manuals.

k) Co-ordinate budgetary control within the training section and present section budgets as required to the Director of Maintenance and Engineering.

l) Keep himself current on industry and other airline developments as they pertain to new aircraft or to improved maintenance practices and teaching techniques.

3. Basic Relationship:

The Chief Technical Training is directly responsible to the Director of Maintenance and Engineering.

TECHNICAL INSTRUCTOR

1. Basic Fuction:

The Technical Instructor shall provide technical training on operation of mechanical and electronic equipment, including emergency procedures, to the Maintenance personnel, air crew members, and personnel of other departments as requested by the section Chief.

2. Responsabilities:

a) To instruct in accordance with the approved outlines.

b) To maintain an accurate and complete record of all individuals entering training.

c) To assist section Chief with training of aircraft, engines, and systems.

d) To assist section Chief with editing of LAB technical Manuals.

e) Assume the duties of the section Chief in his absence.

f) To assist other Sections, on request, with trouble-shooting of engines, airframe, electronic systems.

g) Stay informed as to the most advanced products and methods used in aircraft maintenance, operations and training techniques.

3. Basic Relationship:

The Technical Instructor shall be directly responsible to the Chief Technical Training.

TECHNICAL INSTRUCTOR (ELECTRONICS)

1. Basic Function:

The Technical Instructor (Electronics) shall provide technical training on operation of electronic equipment to the Maintenance and Communication personnel, and the flight crew members, as assigned by the section Chief.

2. Responsabilities:

a) To instruct in accordance with the approved outlines.

b) In the absence of section Chief, to co-ordinate Electronics Training with Communications Superintendent.

c) To assist other Sections, on request, with trouble-shooting of engines, airframes, electronics systems.

d) Stay informed to the most advanced products and methods used in aircraft maintenance, operations and training techniques.

3. Basic Relationship:

The Technical Instructor (Electronics) shall be directly responsible to the Chief Technical Training.

LINK TRAINER INSTRUCTOR

1. Basic Function:

The Link Trainer Instructor shall provide instruction to all flight crew members on flight regulations and navigational procedures.

2. Responsibilities:

a) To instruct flight crews on flight regulations and navigational procedures.

b) To maintain Link facilities on ready condition.

c) In the absence of the section Chief to co-ordinate with Supervisor of Flight Training.

d) To maintain an accurate and complete record of all crew members entering training.

e) Stay informed as to the most advanced methods in navigational instruction.

3. Basic Relationship:

The Link Trainer Instructor shall be directly responsible to the Chief Technical Training.

TECHNICAL MANUAL WRITER

1. Basic Function:

The Technical Manual Writer shall prepare, edit and control technical manuals and associated publications.

2. Responsabilities:

a) Responsible for preparation, editing and control of technical manuals.

b) Correct current technical manuals, and issue superseding pages keeping a record of manual holders.

c) Translate and/or issue any technical literature requested by a Department Director or Section Chief.

d) Any other duty the Section Chief may assign.

3. Basic Relationship:

a) The Technical Manual Writer shall be directly responsible to the Chief Technical Training.

b) Co-ordinate work with the directors of departments involved.

JOB DESCRIPTIONS

MAINTENANCE ADMINISTRATIVE ASSISTANT

Responsible to the Director of Maintenance and Engineering:

DUTIES:

Supervisor of Maintenance office staff.

Prepares routine work orders.

Keeps the daily attendance and absence record.

Types all routine Maintenance correspondence.

Keeps the records of all Maintenance personnel.

Responsible for any other duties the Director may assign.

SUPERINTENDENT ENGINE OVERHAUL

1. Basic Function:

The Superintendent of Engine overhaul is directly responsible for the safe and efficient daily supervision of all personnel assigned to the Engine Overhaul shop and related engine accessory overhaul shops.

2. Responsibilities:

a) To daily observe the performance and production of all personnel assigned to him for supervision.

b) To coordinate with the Engine Planner the projected engine change schedule for time reasons.

c) To coordinate with the Engine Planner the ordering of the necessary replacement parts to insure a continual production of overhauled engines.

d) To program the sequence of engines overhauled by model to insure availability of an overhauled engine for all scheduled engine changes and provide spare engines, all models, to cover off-scheduled engine changes.

e) To keep current on the latest approved parts and procedures, by engine manufacturers, for the overhaul of their respective engines.

f) To observe the disassembly of each engine after run-out to determine unusual wear patterns or conditions that might be caused by poor operating conditions, materials, parts and/or techniques.

g) To analize problems and trends and to make recommendations for corrective action.

h) To keep current on the most modern production tools and equipment for engine and engine accessory overhaul and to order such tools and equipment that will promote efficiency within the section.

i) To coordinate the operation of the Engine Section with the other sections of the department.

j) To investigate all cases of personnel error within his section and take appropriate disciplinary action to prevent reoccurence or in cases of serious error to make recommendations to higher management.

k) To be responsible for all tools and equipment assigned to or used by the section.

l) To enforce all company rules and regulations.

m) To carry out the orders and policies of the Director of Maintenance and Engineering as directed.

3. Basic Relationship:

The Superintendent of Engine Overhaul shall be directly responsible to the Director of Maintenance and Engineering.

SUPERINTENDENT OVERHAUL SHOPS

1. Basic Function:

The Superintendent of the Overhaul Shops is directly responsible for the daily, safe and efficient supervision of all personnel assigned to the Aircraft Overhaul Shop and related aircraft accessory overhaul shops.

2. Responsibilities:

a) To daily observe the performance and production of all personnel assigned to him for supervision.

b) To coordinate with the Aircraft Planner the projected aircraft overhaul schedule.

c) To coordinate with the Rotable Planner the necessary overhaul shop functions to insure that serviceable rotable components are available for the Line Maintenance functions.

d) To keep current on latest approved parts and procedures, by the unit manufacturers, for the overhaul of their respective accessories.

e) To analize all off-scheduled removals and chronic parts failure of aircraft, propeller and accessories. Originate preventative actions to be taken by the overhaul section or make recommendations to other sections or departments which will improve the reliability of the units.

f) To keep current on the most modern production tools and equipment pertinent to aircraft overhaul and aircraft component overhaul. To originate orders for such tools and equipment that will promote production and efficiency within the section.

g) To coordinate the Aircraft and Component Overhaul Section with the other sections in the department.

h) To investigate all cases of personnel error within the section and take appropriate disciplinary action to prevent reoccurence or in cases of sdrious error make recommendations to higher management.

i) To be responsible for all tools and equipment assigned to or used by the section.

j) To enforce all company rules and regulations.

k) To carry out the orders and policies of the Director of Maintenance and Engineering as directed.

3. Basic Relationship:

The Superintendent of Overhaul Shops shall be directly responsible to the Director of Maintenance and Engineering.

SUPERINTENDENT LINE MAINTENANCE

1. Basic Function:

The Superintendent of Line Maintenance shall be responsible to provide aircraft to the Operations Department, as required by schedule, in a clean airworthy condition at all stations where necessary. He shall also be responsible for the development and administration of all phases of Engineering and Planning for the Maintenance Department.

2. Responsibilities:

a) To daily observe the performance and production of all personnel assigned to him for supervision.

b) To develop and maintain a safe, clean, efficient Line Maintenance program at all stations as necessary.

c) To originate the necessary prints or drawings for the repair, conversion or standardization of aircraft, component and/or systems.

d) To maintain the necessary weight and balance control and forms on all aircraft.

e) To develop Line Maintenance trouble-shooting procedures for proper and prompt corrective action to Maintenance problems pertinent to aircraft, engines and/or systems.

f) Analize all delay reports and originate actions or procedures within the section for reduction of delays and cancellations, or make recommendations to the department director for changes by other sections or department that will reflect in the reduction of flight delays and cancellations.

g) Originate requisitions and coordinate with the Stores department maintaining adequate levels of parts and materials for Line Maintenance functions.

h) Coordinate the planning function of the department with the other sections of the department.

i) Keep current on the most modern production tools and equipment pertinent to aircraft and engine maintenance and to originate requisitions for such tools and equipment that will promote production, trouble analysis and efficiency within the section.

j) Provide liaison with the D.G.A.C. on all Engineering problems pertinent to aircraft specifications, modifications, repairs, time extensions and related statistics.

k) Assist with the compilation of cost estimates on aircraft maintenance work to be performed on other than company aircraft.

l) To investigate all cases of personnel error within the section and take appropriate disciplinary action to prevent re-occurence or in the case of serious error make recommendations to higher management.

m) Assume the responsibility for all tools and equipment assigned to or used by the section.

n) To carry out the orders and policies of the Director of Maintenance and Engineering as directed.

3. Basic Relationship:

The Superintendent of Line Maintenance shall be directly responsible to the Director-Maintenance and Engineering.

SUPERINTENDENT OF ELECTRONICS

1. **Basic Function:**

   a) The Superintendent of Electronics is responsible to furnish Flight Operations with aircraft, on time, to meet all schedules, extra trips, charters or other special uses which may be needed. All such aircraft shall be in a clean, airworthy and dependable condition which shall be readily acceptable by the traveling public.

   b) He shall also be responsible for the technical development of adequate communications and navigational systems on all aircraft and at all ground stations throughout the airline system; and for the efficient Maintenance and overhaul of the communications and navigational systems.

2. **Responsibilities:**

   a) Provide the company with the most efficient communication system available consistent with economics concerned.

   b) Responsible for the supervision and provisioning for all aircraft overhaul, modification and major repairs, maintaining the highest possible quality of workmanship.

   c) Provide Line Maintenance with the necessary electronic and radio components that are overhauled, assembled or repaired by LAB.

   d) To maintain the hangars, shops and other working areas in a clean, neat and orderly manner; and to provide the proper care and maintenance of company owned equipment.

e) Preparation of communications and navigational information for publication in appropriate company manuals.

f) Monitor the communications circuits for conformation with company, DGAC and ICAO regulations.

g) Maintain close contact with regulatory agencies and manufacturers on development of improved equipment and procedures.

h) Approve modifications, conversions and installation of Communications/Nav-aid equipment as coordinated with Engineering, Inspection, Operations or Airport Administration.

i) Originate request for the purchase of new equipment, spare parts, and/or other material necessary for the operation of the section.

j) Administer the policies of higher management, enforce the company rules and regulations and maintain a uniform standard of disciplinary action throughout the section.

k) Coordinate budgetary control as applicable to his section.

3. Basic Relationship:

a) The Superintendent of Electronics is directly responsible to the Director of Maintenance and Engineering.

b) He is also responsible for the coordination of the normal functions of the Communication/Electronics section with all other departments and agencies.

LINE SUPERVISOR

1. Basic Function:

The Supervisor of Line Maintenance is directly responsible for planning the work and coordinating the efforts and activities of the various Maintenance crews in such a manner that each crew operates at maximum efficiency.

2. Responsibilities:

a) The quality and quantity of work performed by each crew assigned to him for supervision.

b) Analyzing mechanical problems and malfunctions and directing the proper corrective action.

c) Correlating past problems and corrective actions to prevent repeat troubles and resulting delays.

d) Coordinate with the Planning Section and the Stores Department to insure an adequate supply of spare parts and materials for the Line Maintenance function.

e) Keep informed as to the most advanced products and methods used in aircraft maintenance and operation.

f) Originate requisitions for parts and materials as necessary for the operation of the Line Maintenance Section.

g) Coordinate the shipment of needed parts to other bases upon request, making sure that the correct parts are being shipped.

h) Responsible to see that parts, materials and tools stored, in Line Maintenance Room at the terminal, are maintained at the approved level.

i) Carry out the orders of higher management and to enforce company rules and regulations.

3. Basic Relationship:

The Supervisor of Line Maintenance is directly responsible to the Superintendent of Line Maintenance.

LEAD MECHANIC

1. Basic Function:

The Lead Mechanic is the first step in supervision and is a working member of the crew to which he is assigned. It is the duty of the Lead Mechanic to supervise and/or assist with the execution of all maintenance, repair or overhaul work, as applicable, assigned to his crew.

2. Responsibilities:

a) The planning of all work and assigning each member of the crew to the work in such a manner that proper efficiency and production is realized from EACH member.

b) The quality and quanity of work produced by each member of the crew.

c) For all material used and company equipment assigned to the crew.

d) That all work is accomplished in accordance with published procedure and existing regulations.

e) Enforce safe working practices and habits by all members of the crew.

f) Be thoroughly familiar with the capabilities of EACH member of the crew so that they may be assigned to the work most efficiently.

g) Ascertain that all work accomplished by his crew has been properly signed for and to review all pertinent applicable forms and paper work.

h) Anticipate in advance stock requirements, spare parts, amterial, etc. for execution of work assignments.

3. Relationship:

The Lead Mechanic is directly responsible to the Line Supervisor or Section Superintendent to which he is assigned.

MECHANIC

1. Basic Function:

The Mechanic is responsible to perform all work assigned to him in a workmanlike manner and in accordance with LAB and DOAC policies and regulations.

2. Responsibilities:

a) For all work on aircraft or engines, he will acknowledge completion and satisfactory airworthiness of his work by signing the applicable forms.

b) He will work in a safe and efficient manner at all times.

c) Keep informed of all rules, regulations and procedures pertinent to the performance of his duties.

d) Be aware of the cost of tools and equipment and use them with care.

3. Relationship:

The mechanic is directly responsible to the Lead Mechanic of the crew to which he is assigned.

TRAFFIC AND SALES DIRECTOR

1. Basic Functions:

The Traffic and Sales Director will be responsible to the Vice President General Manager for all matters relative to Traffic & Sales. His primary function will include all these required to insure that Traffic and Sales activities are conducted with the highest degree of safety, reliability and efficiency.

2. Responsibilities:

a. He is responsible for the planning, establishment, coordination and development of a well organized department.

b. He is responsible for the preparation, in conjunction with the Accounting Department, of a monthly and annual budget for his department and for its administration.

c. He shall maintain close liaison with all departments and when necessary coordinate the activities of his department with other departments in the company.

d. He shall be responsible for the maintenance of proper records, (i.e. employment records, salaries) of those personnel in his Department.

e. He shall supervise the establishment of a training program for members of his Department.

f. He shall review and approve all purchase requisitions originating in his department.

g. He shall maintain a thorough knowledge of all regulations (I.A.T.A., I.C.A.O., D.G.A.C. and company) and industry developments, that pertain to Traffic and Sales functions.

h. He shall be responsible for the planning of a yearly traffic goal for his Department.

i. He shall assist in the development of a quarterly and annual advertising program.

j. He shall represent the company at all industry, traffic and sales functions such as A.S.T.A., C.O.T.A.L., A.B.I.T. and others as the General Manager may from time to time instruct.

k. He shall perform other duties as directed by the General Manager.

3. Basic Relationship:

a. The Traffic and Sales Director is responsible to the Vice President General Manager for fulfilling the obligations of his office and energetically promoting the success of the airline.

b. As the senior representative of Traffic and Sales Department, he will keep the General Manager well informed on the status of his department and its immediate needs. He will also advise as to future requirements and assist as necessary in the planning involved.

c. He will maintain a relationship with outside agencies and companies as required to improve the welfare of the company.

d. He shall delegate the proper authority and responsibility to his section heads so they may efficiently perform their duties.

e. He will maintain a close working relationship with his department supervisors and monitor their performance.

f. He will also promote a team effort philosophy by working harmoniously with other department heads.

COMMERCIAL DEVELOPMENT REPRESENTATIVE

1. Basic Function:

The Commercial Development Representative is directly responsible to the Director of Traffic and Sales. His basic function is to seek out and develop new markets for the company.

2. Responsibilities:

a) He shall constantly seek new markets to improve traffic.

b) He shall work closely with merchants and businessmen on LAB's system to improve the economy of Bolivia by assisting in the expansion of their areas of influence.

c) He shall provide a liaison between the General public and the Traffic and Sales Department to improve this relationship.

d) He shall report on all discrepancies in the operation to the proper department head.

e) He shall assist the Director of Traffic and Sales in the development of new routes and areas for service.

f) He shall assist in the development of market and economic studies.

g) He shall assist in the formulation of special programs in order to achieve his basic function.

3. Basic Relationship:

The Commercial Development Representative is directly responsible to the Director of Traffic and Sales.

PUBLIC RELATIONS SUPERINTENDENT

1. Basic Functions:

The main functions of the Public Relations Superintendent shall be to direct all Publicity, Advertising Customer correspondence and trade agreements. It shall be his function to interpret the company policies to the personnel of LAE and to the public through publicity and special activities.

2. Responsibilities:

The Public Relations Superintendent shall be directly responsible for the following:

a) Prepare all news releases for the company.

b) Prepare other items of public interest that will be required from time to time.

c) Plan, prepare and coordinate all advertising programs for the company.

d) Prepare and maintain a budget for the department.

e) Initiate programs to secure advertising on a "Trade Agreement" basis with the advertising media.

f) Answer and when necessary investigate all written customer complaints and coordinate the necessary corrective action with the proper departments.

g) Periodically review and update the Public Relations section of the Traffic Manual.

3. Basic Relationship:

The Public Relations Superintendent shall be directly responsible to the Director of Traffic and Sales.

SALES SUPERINTENDENT

1. Basic Functions:

The Sales Superintendent basic functions shall be to coordinate all sales activities under his direct jurisdiction, to increase cargo and express traffic.

2. Responsibilities:

a) The Sales Superintendent shall be responsible for all the activities of the District Traffic and Sales Representatives, International City Managers and City Ticket Office Chiefs.

b) He shall prepare a monthly and yearly system quota for all stations for passengers, cargo and express.

c) He shall prepare a yearly sales plan in coordination with the Traffic and Sales Director outlining the sales procedures and goals for the year.

d) He shall prepare and organize special promotion campaigns to be implemented by the field.

e) He shall make inspection trips to the various stations on the system to see that all is in proper operating order.

f) He shall prepare a yearly budget for his department with the cooperation of District Traffic and Sales Representatives, International City Managers and City Ticket Office Chiefs.

g) He shall be responsible for all interline relations and shall prepare interline agreements for the signature of the Traffic and Sales Director.

h) He shall prepare promotional material for the sales needs of his department.

SALES SUPERINTENDENT - (Continued)

3. Basic Relationships:

The Sales Superintendent shall be directly responsible to the Director of Traffic and Sales.

TRAFFIC SUPERINTENDENT

1. Basic Functions:

The Traffic Superintendent's basic function shall be the planning, coordinating, development and establishing the following functions: Reservations, Tariffs and Schedules, Regulations and Procedures and the Traffic manual. He is directly responsible to the Traffic and Sales Director.

2. Responsibilities:

a) He shall be responsible for the operation of the following: Reservations, Tariffs and Schedules, Regulations and Procedures and of the manual writer.

b) He shall prepare, maintain and administer a yearly budget for his section.

c) He shall administer the company rules, domestic and international regulations to all sections under his supervision.

d) He shall continually plan and develop new and improved procedures for the sections under his supervision.

e) He shall coordinate the Reservations sections function with other departments.

f) He shall set standards of quality control for his sections.

g) He shall approve the selection and assignment of all reservations personnel.

h) He shall coordinate employee transfers, terminations.

3. Basic Relationship:

The Traffic Superintendent shall be directly responsible to the Traffic and Sales Director.

SUPERINTENDENT OF STATIONS

1. Basic Function:

The Superintendent of Stations is responsible to the Director of Traffic and Sales for the safe, reliable and efficient operation of all stations.

2. Responsibilities:

a) Select personnel for employment and advancement based on the criteria which has been established as company policy.

b) Establish and direct the establishment of those criteria for station personnel employment and/or advancement with the assistance of the Traffic and Sales administrative staff and the Personnel Department.

c) Maintain close liaison with all divisions and departments in the company in matters pertaining to station operations, duties and administration.

d) Direct the activities of Station Managers and personnel under their jurisdiction in accordance with organizational procedures.

e) Assist in the maintenance of adequate personnel records covering employment, advancement, pay scales, etc.

f) Establish and monitor a training program for the purpose of training all station personnel.

g) Develop and monitor procedures to improve the efficient operation of all stations.

h) Plan and requisition the equipment needs of all existing stations as well as newly established stations.

i) Work with the Chief Meteorologist of LAB in all matters pertaining to weather reporting in the stations.

j) Monitor station expenditures to assure that all items requested are necessary and are within reason.

k) Keep informed of Company, DGAC, and other Governmental rules and regulations as adhered to by station personnel.

l) Secure the safest, most efficient organization possible at the most reasonable cost.

m) Make periodic station inspections to obtain first hand information on conditions and effect the necessary corrective action.

n) Assist other Department Supervisors and Management in the formulation of policies and procedures for obtaining maximum utilization of personnel and good employee relations.

o) Perform such additional duties and responsibilities as may be directed by the Director of Traffic and Sales.

p) Carry out specific responsibilities as set forth in Company manuals, bulletins and published instructions as they pertain to the operation of the station.

q) Monitor all information furnished to the Stations for the correctness of text and practicability.

r) Maintain the station manual in an up-to-date condition at all times.

s) Establish systems whereby it can be assured that only current and applicable information is provided to the stations.

3. Basic Relationship:

a) The Superintendent of Stations is administratively responsible to the Director of Traffic and Sales for the discharge of all responsibilities delegated above.

b) Works with other departments to improve and coordinate all functions of the stations and station personnel.

c) Maintain close liaison with the Director of Airport Administrations to insure compliance with LAB policies at those airports without Airport Managers when the Station Manager is responsible for the normal duties of the Airport Manager.

DISTRICT TRAFFIC & SALES REPRESENTATIVES

1. Basic Function:

The District Traffic & Sales Representatives' basic function shall be to promote passenger, cargo and express traffic, to supervise the Traffic & Sales activities of all stations under their supervision. They shall be responsible to the Sales Superintendent

2. Responsibilities:

a) Sales Calls - To make sales calls on all travel agents, interline, commercial accounts, Government agencies, clubs or other potential accounts and to report such sale activities on his daily sales report form to the Superintendent of Sales.

b) Group and Tour Sales - To promote group and tour sales over the LAB system through travel agents, promoters, civic and private clubs.

c) Cargo - To promote cargo, domestic and international, by making sales calls on cargo agents, brokers and making market studies on the movement of cargo from and within Bolivia.

d) To conduct sales programs at all stations for which he is directly responsible.

e) To make special sales presentations on Air Travel Benefits to commercial accounts, travel agents and cargo agents, travel promoters, civic organizations, clubs, etc.

f) To represent LAB at civic functions, and to coordinate projects closely with the Public Relations Department.

g) To advise the Sales Superintendent of the required amount of timetables and propaganda material that he needs to promote passenger and cargo traffic in his territory.

h) He shall monitor all company advertising programs for accuracy and quality and advise the Public Relations Department immediately of any errors.

i) He shall energetically promote the sales of traffic for the success of the company.

j) He shall visit each city in his area at least once every 60 days and shall report his activities and findings to the Sales Superintendent.

k) He shall periodically review industry developments and company improvements.

l) He shall advise the Superintendent of Sales of any improvements in schedules, tariffs and staffing that may assist in the development of the company.

m) He shall, when riding company flights, observe the in-flight service and report any discrepancies to the Manager of Fleet Service.

3. Basic Relationships:

The District Traffic and Sales Representative shall be directly responsible to the Sales Superintendent who is responsible to the the Traffic and Sales Director.

a) La Paz - The District Traffic and Sales Representative in La Paz shall be directly responsible for all Traffic and Sales activities in the following stations and their adjacent areas Oruro, San Borja, Reyes, Rurrenabaque, Apolo and Arica.

b) Cochabamba - The District Traffic and Sales Representative in Cochabamba shall be directly responsible for all Traffic & Sales activities in the following stations: Todos Santos,

Tarija, Yacuiba and Salta.

c) Santa Cruz - The District Traffic and Sales Representative in Santa Cruz shall be responsible for all the Traffic and Sales activities in the following stations: Ascención, San Javier, Concepcion, San Ignacio de Velasco, San José, Roboré, Puerto Suarez and Corumba.

d) Trinidad - The District Traffic and Sales Representative in Trinidad shall be directly responsible for all Traffic and Sales activities in the following stations: San Ignacio de Moxos, Santa Ana, Magdalena, San Ramón, San Joaquin, Guayaramerin, Puerto Rico and Cobija.

INTERNATIONAL CITY MANAGER

1. Basic Functions:

The International City Manager is directly responsible to the Superintendent of Sales. He shall plan, coordinate and administer all Reservations, ticketing, cargo and encomienda activities in his office to achieve the maximum efficiency of his personnel for the good of the company and the general public.

2. Responsibilities:

a) He is responsible for the administration of all functions concerning the international city office, such as Reservations, telephone sales, ticketing, cargo, encomienda, customer relations, appearance of personnel and office, promotional displays and the information section.

b) He shall be responsible for the proper preparation and prompt submission of sales reports.

c) He shall prepare employee shift schedules to correspond with local conditions and the company's flight schedule.

d) He shall give the proper authority and responsibility to his supervisors so they may carry out their work efficiently.

e) He shall coordinate all ground transportation from the city ticket office to the airport in accordance to the needs of the LAB schedule.

f) He shall administer all company and Government regulations with reference to Reservations, ticketing, cargo, encomienda, mail and charters.

g) He shall maintain all manuals assigned to assure that they are always current.

h) He will conduct regularly scheduled meetings with all his personnel to review irregularities of policies, procedures, and other subjects relative to the efficient operation of the office.

i) He shall train personnel assigned to his office in:

1) Established company policy and procedures, company manuals and Government rules and regulations.

2) Standard operating procedures.

3) Personnel relations

4) Good public relations technique.

5) Management technique.

6) Good personal appearance habits.

7) An overall understanding of LAB's operations.

j) He shall advise the proper company officials of local regulations and any changes that may affect the company.

k) He shall periodically file written reports of his activities with the Superintendent of Sales.

l) He shall be responsible for all sales promotion activities in his city.

m) He shall represent the company before all Government officials and endeavor to maintain good public relations for the company.

n) He shall carry out other duties as the Superintendent of Sales may from time to time instruct.

3. Basic Relationship: The International City Manager shall be directly responsible to the Superintendent of Sales.

CITY TICKET OFFICE MANAGER

1. Basic Functions:

The basic function of the City Ticket Office Manager is to plan, coordinate and administer all Reservations, ticketing, cargo and encomienda activities in his office to achieve the maximum efficiency of his personnel for the good of the company and the general public. He is directly responsible to the Superintendent of Sales.

2. Responsibilities:

a) He is responsible for the administration of all functions concerning the city ticket office, such as Reservations, telephone sales, ticketing, cargo, encomienda, customers relations, appearance of personnel and office, promotional displays and the information section.

b) He shall be responsible for the proper preparation and prompt submission of sales reports.

c) He shall prepare employee shift schedules to correspond with local conditions and the company's flight schedule.

d) He shall give the proper authority and responsibility to his supervisors so they may carry out their work efficiently.

e) He shall coordinate all ground transportation from the city ticket office to the airport in accordance to the needs of LAB schedule.

f) He shall administer all company and Government regulations with reference to Reservations, ticketing, cargo, encomienda mail and charters.

g) He shall be directly in charge of all city ticket office sales agents, cargo handlers and guards.

h) He will conduct regularly scheduled meetings with all his personnel to review irregularities of policy, procedures and other subjects relative to the efficient operation of the office.

i) He shall train personnel assigned to his office in:

1) Established company policy and procedures, company manuals and Government rules and regulations.

2) Standard operating procedures.

3) Personnel relations.

4) Good public relations technique.

5) Management technique.

6) Good personal appearance habits.

7) An overall understanding of LAB's operations.

. Basic Relationship:

The City Ticket Office Manager shall be directly responsible to the Sales Superintendent.

TARIFF & SCHEDULES CHIEF

1. Basic Functions:

The Tariff and Schedules Chief basic function shall be to prepare a schedule that shall be of the highest utilization for the company and for the general public. He shall also establish passenger, cargo, encomienda and charter tariffs that are beneficial to the company and to the general public. He is directly responsible to the Superintendent of Traffic.

2. Responsibilities:

a) He shall file all schedules, domestic as well as international, with the proper Government officials.

b) He shall file all tariffs, domestic and international, with the proper Government officials.

c) He shall file tariffs and schedules with the various trade magazines as per instructions from the Traffic Superintendent

d) He shall be responsible for the printing and distribution of all Tariffs and Schedules.

e) He shall supervise the Pass Bureau and maintain its records and correspondence.

f) He shall work out all special requests for charter tariffs in conjunction with the Traffic Superintendent.

g) He shall assist the Traffic Superintendent in developing special tariffs.

h) He shall develop a monthly traffic analysis.

3. Basic Relationship:

The Tariffs and Schedules Chief shall be directly responsible to the Traffic Superintendent.

REGULATIONS AND PROCEDURES CHIEF

1. Basic Function:

The Regulations and Procedures Chief is responsible to the Traffic Superintendent. His basic function is to keep company personnel advised of all traffic regulations, domestic and international, for the protection of the company, also the training of all the traffic and sales personnel on the procedures of ticketing, rates and international documentation.

2. Responsibilities:

a) He shall prepare and circulate all company regulations with reference to domestic and international traffic.

b) He shall instruct the ticket agents in the proper procedure for writing domestic as well as international tickets.

c) He shall compile notices of changes of all Government rules and regulations on traffic and shall disseminate said information to all traffic and sales personnel.

d) He shall become familiar with all traffic regulations of I.A.T.A., I.C.A.O. and other agencies as may from time to time be deemed necessary.

e) He shall maintain all traffic and sales manuals of other interline companies plus a reference library.

f) He shall assist the training department in the formation and periodic review of all regulations pertaining to Traffic and Sales.

3. Basic Relationship:

The Regulations and Procedures Chief shall be directly responsible to the Superintendent of Traffic.

MANUAL WRITER

1. Basic Function:

The basic function of the Manual Writer shall be the up-dating and maintenance of a traffic manual and a station manual which shall include all basic job descriptions, organization charts, rules and regulations. He is directly responsible to the Superintendent of Traffic.

2. Responsibilities:

a) He shall be responsible for the periodic review and revision of the traffic and station manuals.

b) He shall maintain a complete list of distribution of all manuals.

c) He shall maintain a record of the distribution of corrections and additions to the manual.

d) He shall work in cooperation with the Regulations and Procedures Chief, Station Superintendent and Traffic Superintendent for the drafting of additions and corrections to the manuals.

e) He shall coordinate, when necessary, all revisions or additions to manuals with the proper department or section heads.

3. Basic Relationship:

The Manual Writer shall be directly responsible to the Traffic Superintendent and Superintendent of Stations.

RESERVATIONS CHIEF

1. Basic Functions:

The Reservations Chief's basic function shall be the administration and operational efficiency at the reservation section, and is responsible for the planning, coordination and implementation of all approved procedures to the Superintendent of Traffic.

2. Responsibilities:

a) He shall be responsible for hiring, discipline and termination of reservations personnel in accordance with company policies.

b) He shall be responsible for job coverage at all reservations offices.

c) He shall be responsible for the training and on-the-job performance of all Reservations agents.

d) He shall be responsible for periodically reviewing the performance of all personnel and reporting it to the Traffic Superintendent.

e) He shall be responsible for the forecasting and recommending for physical facilities and equipment for one year in advance.

f) He shall be responsible for the operation of telephone sales.

g) He shall develop and supervise a method of quality control.

h) He shall be responsible for allocation of space to the stations.

i) He shall set up and maintain an adequate reservations procedure.

j) He shall study the possibilities of giving free sale to stations or to interline carriers.

k) He shall be responsible to coordinate flight operations for establishing extra sections and charters.

l) He shall work in cooperation with operations for the daily flight plan.

m) He shall direct the city reservations (in charge of) in attaining his primary responsibility of providing the company with well informed and well trained personnel required for an efficient reservation operation.

n) To direct the Reservations Control in attaining his primary responsibilities of providing the company with an efficient and effective system of space control that assures the company of maximum revenue from maximum utilization of all available seats for sale.

3. Basic Relationship:

The Reservations Chief shall be directly responsible to the Superintendent of Traffic.

STATION TRAINING SUPERVISOR

1. Basic Functions:

To train station personnel to achieve the highest and most efficient standards for the company.

2. Responsibilities:

a) Train and instruct new personnel in operations, ticketing, meteorology, reservations, passenger servica and ramp procedures.

b) Compose and administer examinations for promotional advancemen within the station organization.

c) Review new procedures in operations, reservations, ticketing, meteorology, and ramp functions and set up training programs necessitated by those procedures.

d) Monitor work performed in the station organization and fulfill any need for training indicated as a result.

e) Develop and administer a follo-up training program.

f) Compose, administer and grade practice excesices on a periodic schedule.

g) Design, construct and maintain all visual aids necessary to the efficient conduct of the training program.

h) Carry out additional special duties as assigned by the Superintendent of Stations.

3. Basic Relationship:

The Station Training Supervisor shall be directly responsible to the Superintendent of Stations.

CHIEF OF FLEET SERVICE

1. Basic Functions:

   a) To establish and maintain a high standard of cleanliness in all equipment used in food and beverage service to the general public.

   b) To work closely and coordinate all in-flight service with the Chief Cabin Attendant.

   c) To secure the best possible food and beverage at the lowest possible cost.

2. Responsibilities:

   a) To establish rigid written instructions for LAB employees and restaurant operators providing LAB with food and beverage on cleanliness habits and procedures as follows:

      1) All dishes to be washed in hot water (160°F) and soap, rinsed in hot water twice and allowed to drip dry before storing.

      2) All dishes are to be stored in a clean dry enclosure so that foreign matter will not collect on the dishes.

      3) All raw vegetables served to the general public such as carrots, tomatoes, radishes, onions, cabbage, cucumbers, etc. will be peeled before serving. All other raw vegetables will be soaked in water treated with halizone or equal for ½ hour before serving.

      4) Proper selection of fruits to assure that LAB passengers will receive only the highest quality.

      5) All meats to be of highest quality and prepared according to European and United States standards.

6. All metal tableware and utensils are to be boiled for five minutes or put in a steam chamber for 5 minutes after washing to insure sanitary condition after each

b) Develop and maintain attractive and practical in-flight service equipment such as cups, saucers, plates, trays, napkins, etc.

c) Conduct regular inspections of all LAB kitchens and the kitchens of those restaurants furnishing food and drink to LAB.

d) Maintain tight security of all LAB equipment through a regular system of inventory.

e) Establish and maintain tight security of all LAB food and drink to prevent pilferage and spoilage.

f) Work with other departments to develop methods of improving quality of service and introduction of new and more efficient equipment.

g) Keep informed on latest techniques in preparing food and drink.

h) Keep informed on latest techniques and equipment used in attaining maximum sanitary conditions at all times.

i) Instruct LAB employees under his supervision on the latest sanitary methods in the preparation of food and cleanliness of equipment.

j) Require all restaurant operators who furnish LAB with food and drink to conform with LAB standards in the preparation of food and drink and cleanliness of equipment.

2. Basic Relationship:

a) The Chief of Fleet Service is directly responsible to the Superintendent of Stations for the fulfilment of his duties.

b) The Chief of Fleet Service will work very closely with the Chief of Cabin Attendants to insure a uniform and high standard of service.

c) The Chief of Fleet Service will provide instruction to the Cabin Attendants at the request of the Chief of Cabin Attendants.

CLAIMS AND DAMAGES CHIEF

1. Basic Function:

To provide essential service to the passenger or client, furnish prompt recovery of lost, misplaced or damaged articles and provide a quick return to their rightful owners. To accomplish this, all employees and departments shall cooperate and assist in every possible manner with the Claims and Damages Chief. The passenger or client must be made to feel that we are doing everything possible for him.

2. Responsibilities:

a) Secure complete detailed information on the lost, misplaced or damaged article.

b) Secure name of passenger and address.

c) Secure point of origin, flight number, date, check number and when last seen; in case of cargo, point of origin, number of airway bill, date shipped, number of pieces and weight.

d) Advise all station on the above information, for baggage using "Baggage Identification Chart" code numbers.

e) Fill out the proper claim papers for the insurance company.

f) Keep the passenger or client advised on the progress of his claim.

3. Basic Relationship:

The Claims and Damage Chief shall be directly responsible to the Superintendent of Stations.

STATION MANAGER (Jefe Estación)

Station Managers shall be male employees of LAB, who are qualified to perform the basic functions, carry out the responsibilities and maintain the basic relationships required as follows:

1. Basic Functions:

   a) To act as the principal LAB representative in his station's community and surrounding areas. To represent LAB to the general public within his base area, in as friendly and efficient a manner as possible.

   b) To represent LAB to the various groups and agencies within his area and to handle promotion and give speeches before such groups to further LAB's interests.

   c) To maintain his station in a high level of safety, efficiency, personnel training and operating standards.

2. Responsibilities:

   a) Direct the activities within his assigned station in order that operations are conducted as efficiently as possible at the lowest possible cost.

   b) Carry out all responsibilities and duties set forth by the Superintendent of Stations, other Department Superintendents written bulletins, letters and manuals.

   c) Train personnel assigned to his station in:

      1) Company policies and procedures set forth and established, company manuals furnished to the station, supplemental information furnished and Government rules and regulations.

2) Standard operating procedures.

3) Personnel relations.

4) Good public relations techniques.

5) Management techniques for qualifying for advancement.

6) Good personal appearance habits.

7) An overall understanding of LAB's operation.

d. Carefully and faithfully carry out station inspections taking all corrective action possible on discrepancies found. In order to accomplish this, a definite schedule should be set up and followe

e) Insure that adequate protection is maintained for:

1) Safety of passengers and public while on airport premises.

2) Company property from loss, theft, damage, or undue deterioration from neglect.

3) Safeguarding of files, reports, correspondence, etc.

4) Confidential Company business.

5) Safeguarding of company numbered tickets and other numbered forms.

f) Recommend procedures or changes through the immediate supervisor which it is felt will achieve the best results in attaining the objectives of the Company.

g) Cooperate with all other departments to the fullest extent possible within the rules and regulations established by the company.

h) Maintain all manuals and supplemental information furnished his station in an up-to-date condition at all times.

i) Furnish, through the personnel assigned to his station, the safest possible operation. Safety shall be the first consideration of all LAB personnel.

j) Promote the most efficient operation at the lowest practical cost.

k) Compose and issue Station Orders which will effectively guide the activities of personnel in his station. Station orders may be defined as instructions of a purely local application which nevertheless comply with basic company policies and procedures.

l) Coordinate the activities whithin his station with other stations and departments, through close cooperation with the Superintendent of Stations.

m) Carry out additional special duties as specified by the Superintendent of Stations.

3. Basic Relationships:

a) The Station Manager is directly responsible to the Superintendent of Stations.

b) The Station Manager is responsible, through the Superintendent of Stations, for the coordination of such duties as may be governed or regulated by other departments within the company.

c) The Station Manager will also assume the execution of the responsibilities of the Airport Manager at those LAB airports with no Airport Manager. He will be responsible for this task to the Superintendent of Stations, who, in turn will coordinate through proper channels with the Director of Airport Administration.

STATION AUXILIAR

Station Auxiliars shall be male employees of LAB, who are qualified to perform the basic functions, carry out the responsibilities and maintain the basic relationships required as follows :

1. Basic Function:

   The basic functions of the Station Auxiliar are to carry out all policies and procedures as set forth in published company regulations and procedures including miscellaneous directives affecting the station operation and functions. All functions required will be carried out in a safe, efficient and economical manner.

2. Responsibilities:

   a) Familiarize himself with all pertinent written information furnished to the station for the conduct of its activities.

   b) Carry out all duties and responsibilities set forth in the company's published directives to the best of his ability and in as safe a manner as possible.

   c) Carry out all duties in the most economical manner possible, consistant with the rules and regulations and safe operating practices.

   d) Improve his level of proficiency and constantly strive to improve the station's proficiency.

   e) Submit any and all improvement suggestions to the Station Manager which might increase safety, efficiency, and economical operation of the station or company.

f) Develop excellent public relations as concerns the general public and LAB.

g) Assist the Station Manager as much as possible in the proper discharge of his responsibilities.

h) Perform the duties of a weather observer as required by the Station Manager.

i) Perform the duties of a radio operator as required by the Station Manager.

j) Carry out all additional duties and responsibilities as assigned by the Station Manager.

3. Basic Relationships:

The Station Auxiliar is directly responsible to the Station Manager. Through the Station, the Station Auxiliars are responsible to the Superintendent of Stations.

IN CHARGE OF RESERVATIONS

1. Basic Functions:

The person in charge of Reservations shall be directly responsible to the Reservations Chief. His basic function shall be the operational efficiency of the Reservations and Ticketing offices.

2. Responsibilities:

a) The planning, coordination and implementation of all approved reservations and ticketing procedures and methods.

b) Maintaining a high degree of coordination and cooperation between the ground operating department and Traffic and Sales department.

c) Observing employee performance and transactions between offices to assure that established procedures are being adhered to.

d) Interpreting procedures and instructing on methods to improv on-the-job performance. To render constructive criticism with utmost tact and diplomacy whenever necessary.

e) Reviewing the performance of all personnel involved in administering reservations and ticketing functions and discussing the results with the individual supervisors.

f) Notifying the manager's immediate supervisor of those offic that continue to or contantly violate established procedure and/or policies.

g) Checking reservations transmissions and notify stations of discrepancies.

h) Checking all manuals to assure that they are always current

i) Examining reservations records and sales charts for legibility, accuracy and completeness.

j) Reviewing Reservations clerks work schedule to gain maximum utilization of assigned employees.

k) Checking Tariff quotations for accuracy.

l) Observing personnel appearance, grooming, uniforms. courtesy, etc.

m) Checking physical appearance of reservations office and make recommendations for improvements.

n) Forecast and recommend personnel and equipment requirements.

3. Basic Relationship:

The Person in Charge of Reservations shall be responsible to the Reservations Chief and to the City Ticket Office Chief.

RESERVATIONS CLERKS

1. Basic Functions:

The Reservations Clerks' basic functions shall be to give good service to the public and at the same time to create a lasting favorable impression on the traveling public.

2. Responsibilities:

a) Perform all duties assigned to him by his supervisor.

b) Carry out all duties and responsibilities set forth in the company manuals.

c) To be patient and not discourteous to prospective travelers.

d) All written work must be legible and accurate.

e) It will be necessary for the Reservations clerk to use his own good judgement or if deemed necessary, to consult his Reservations Chief.

f) To be alert, helpful and have a courteous attitude at all times.

g) To have knowledge of the business and present it in an intelligent manner.

h) Airline slang or terminology must neve be used in conversing with a prospective passenger.

i) Keep all conversations as clear, concise and understandable as possible.

3. Basic Relationship:

All Reservations Clerks shall be directly responsible to the Reservations Chief.

DIRECTOR AIRPORT ADMINISTRATION

1. Basic Function:

The Director of Airport Administration is responsible for the safe and reliable condition of all airports in Bolivia for which LAB is responsible; the establishment of a Flight Protection Service; the promotion of additional technical skill in the construction and maintenance of all LAB airports and property.

2. Responsibilities:

a. Maintain close liaison with all divisions and departments in the company in matters pertaining to airports, air traffic control and construction of LAB property.

b. Direct the activities of all LAB Airport Managers to assure a safe, efficient operation of all LAB airports.

c. Advise and instruct all personnel in his department charged with the responsibility of sending in reports the proper information needed for such reports.

d. Coordinate with the Director of Traffic and Sales through the Superintendent of Stations to assure the duties and responsibilities of an Airport Manager are accomplished by the Station Manager at those LAB airports with no Airport Manager.

e. Direct the activities of the Superintendent of Flight Protection Services to assure the establishment of adequate control procedures for safe and reliable air separation of all aircraft in Bolivia.

f. Supervise and control the activities of the Airport Engineer to assure proper development and construction of airports for which LAB is held responsible.

g. Coordinate with the Director of Finance and Accounting for the purpose of establishing necessary Accounting procedures that will separate funds and accounts that are receivable and payable belonging to LAB and those funds and accounts that belong to Airport Administration.

h. Familiarize himself with the requirements of the Bolivian Government in relation to airports, in particular those airports for which LAB is held responsible,

i. Maintain adequate files and records as required by company policies, Government and DGAC regulations.

j. Monitor the establishment of adequate records and files in the departments under his supervision.

k. Establish and maintain adequate personnel files for all personnel in his department.

l. Establish and administer a budget for his department after consulting with the Supervisors of the sections.

m. Establish and maintain uniform disciplinary procedures for all personnel in his Department. Monitoring of the application of established disciplinary procedures is necessary for uniformity

n. Delegate the necessary authority to his subordinates to enable them to carry out their duties and responsibilities.

o. Act on all purchase requisitions, and man power needs with the best interest of the company in mind at all times.

p. Perform other duties and responsibilities as directed by the General Manager.

3. Basic Relationship:

a. The Director of Airport Administration is directly responsible to the Vice President, General Manager for the efficient, safe and reliable operation of his Department.

b. Maintain close liaison with all company department heads and supervisors, Governmental agencies, DGAC, and other persons concerned with airports.

c. Keep informed on latest technical information pertaining to airport construction, equipment, navigational aids and administrative techniques.

AIRPORT MANAGER

1. Basic Function:

The Airport Manager is responsible to the Director of Airport Administration for the safe condition of the runways at his airport, the reliable operation of the airport and the proper execution of his responsibilities.

2. Responsibilities:

a) It shall be the responsibility of the Airport Manager to physically check the condition of the runways at his airport and report his findings immediately to the Station Manager or his alternate on a daily basis.

b) The Airport Manager or his alternate shall make the physical check of the runways prior to the scheduled arrival of the first flight to insure that a safe landing can be made.

c) All operations of aircraft (including LAB aircraft) will be monitored and tabulated and reported to the Director of Airport Administrations as required.

d) The Airport Manager will be responsible for the security of the airport, buildings and equipment.

e) All repairs needed will be brought to the attention of the Director of Airport Administration immediately and corrective action taken will be coordinated with the Airport Engineer.

f) Keep informed on all company, DGAC and other governmental rules and regulations as they pertain to airports.

g) Maintain personnel records on all employees under his supervision.

h) Effect and administer corrective disciplinary action as needed.

i) Monitor the operation of other than LAB aircraft to assure efficient servicing by his employees and to give assistance and direction where needed.

j) Responsible for any reasonable function normally expected of an Airport Manager.

3. Basic Relationships:

a) All Airport Managers are directly responsible to the Director of Airport Administration.

b) Airport Managers are responsible through the Director of Airport Administration for the coordination of such duties as may be governed or regulated by other Departments within the company.

c) At those airports where LAB has a Station Manager and an Airport Manager, it is absolutely mandatory that close coordination be maintained to assure LAB of a safe and efficient operation.

TURBINE - POWERED AIRCRAFT STUDY

FOR

LLOYD AEREO BOLIVIANO

EXHIBIT II

T U R B O S T U D Y

This study was made in order to call attention to the proven attributes of certain turbine-powered aircraft and to show, in a practical way, the economic and operational improvements that could be realized through the introduction of these aircraft on LAB's routes.

We believe that the study, although purposely limited in scope, is entirely sufficient to allow a decision to be made as to whether or not a course of action, leading to the probable acquisition of turbine aircraft, should be actively pursued.

The various analysis and comparisons used in this evaluation were based on the latest readily available information. Sources include: FAA approved aircraft manuals, manufacturer's releases, Ray & Ray reports, U.S. carrier statistics and data from specific airlines.

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I. WHY TURBINE POWER?

The advantages of turbine power have obsoleted piston power to the extent that no airliner has been designed and built around piston power for more than a decade.

The most significant of these advantages are:

RELIABILITY	EFFICIENCY
PERFORMANCE	ECONOMY

Factors contributing to these basic advantages include:

1. Basic simplicity of design
2. Lack of rubbing surfaces
3. Lack of reciprocating parts
4. High power to weight ratio
5. Low frontal drag area
6. Absence of cooling problems
7. Freedom from impulse vibration
8. Ability to use low cost fuel

CHARACTERISTICS OF TURBINE VS PISTON ENGINES

RELIABILITY: The superior reliability of turbine engines is a well established fact. The reliability characteristics of turbine engines is very well illustrated by the basic in-flight shut down rate of the Rolls Royce Dart engine which at the present time is 1 per 33,000 hours. This is approximately 10 times better than the maximum rate considered acceptable for piston engines.

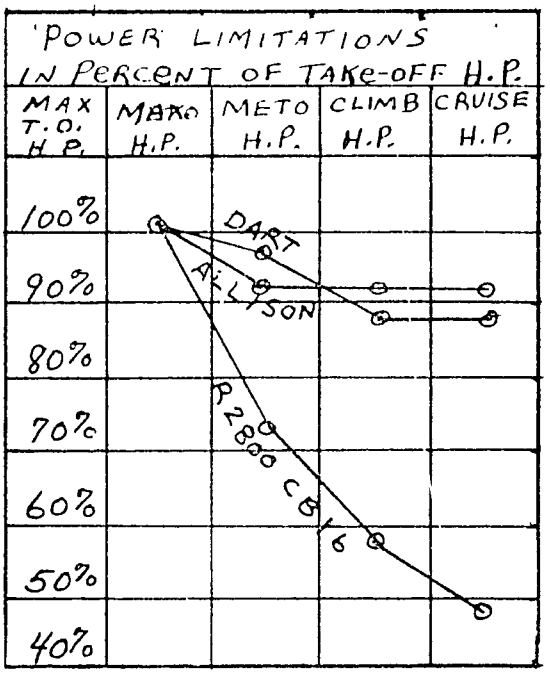
In comparing reliability characteristics of piston and turbine engines it is especially important to be cognizant of the fact that the life and reliability of piston engines will be adversely affected by any operation involving increased use of powers in excess of cruise power values.. (Increased No. of take-offs, prolonged climbs, etc.)

Turbine engines may also be affected by this power factor but to a much lesser degree. In this respect, it is interesting to note that the very high reliability factor and very high times between overhaul of the R.R.Dart were actually developed on short hauls. (1-1½ hr. av. for the Viscount and 48 minutes av. for the F-227).

The fact that turbine engines are more impervious to the effects of the power factor can be attributed to the following:

1. The turbine engine represents an entirely different principle in converting combustion heat into useable horse power

2. The spread or difference between take-off, meto, climb and cruise powers of a turbine engine is much less than that of a piston engine. As can be readily observed from the following chart.



PERFORMANCE: The high power to weight ratio of turbine engines permits mating an airframe with a turbine engine of greater power than any compatible piston engine. The selection of turbine power will, therefore, insure greater take-off performance.

Climb and cruise performance of a turbine powered aircraft is substantially enhanced because the characteristics of turbine engines permit a high percentage of maximum power to be used in climb and cruise regimes.

EFFICIENCY: The power output of a turbine engine is approximately proportional to fuel consumption throughout the entire range of normal power outputs.

This is not true with piston engines as can be seen from the following example: Climb power for the R-2800 CB 16 is only 27% greater than cruise power, yet it involves a 100% increase in fuel consumption.

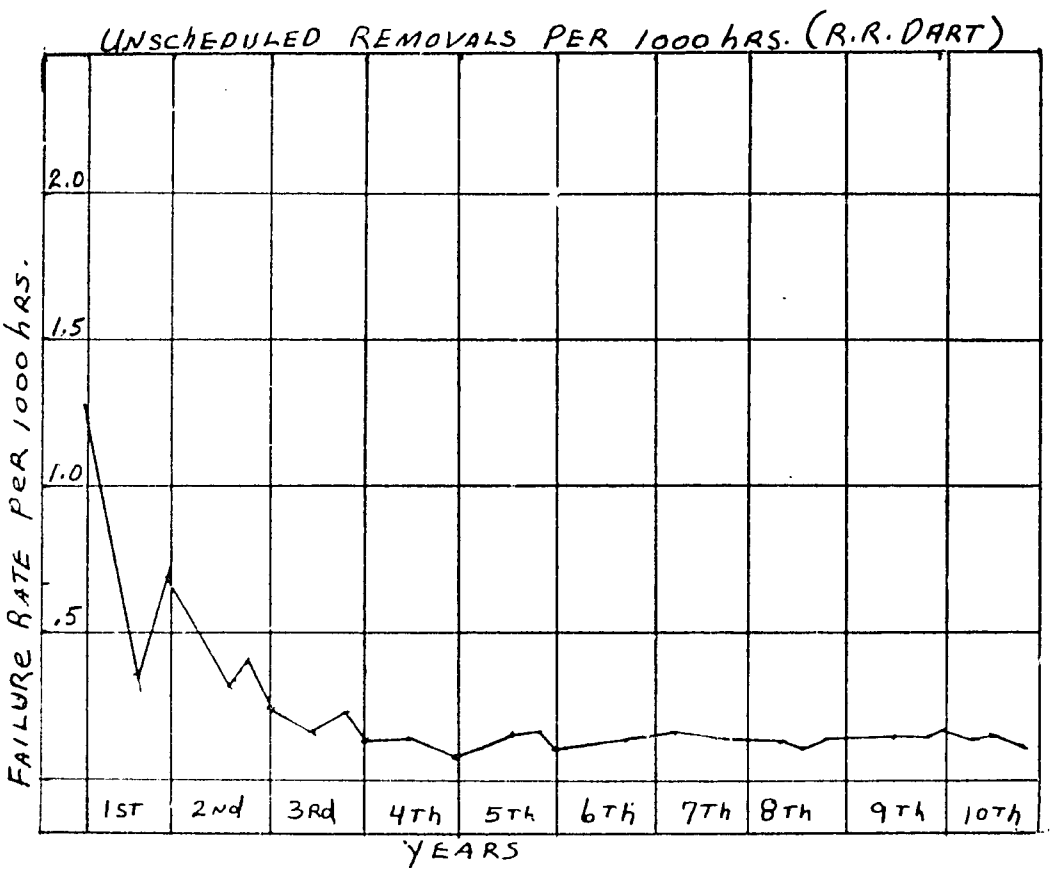
The efficiency of a turbine engine is also evident from the fact that its actual power output will remain remarkably constant throughout the time from overhaul to overhaul.

This is not the general rule with piston engines because they are subject to many power deterioration factors.

ECONOMY: The economy associated with turbine engines can be primarily attributed to: Ability to use low cost fuel, freedom from high cost intermediate maintenance and high times between overhauls.

TIME BETWEEN OVERHAULS: The allowable time between overhaul for piston engines is dependent on engine failure rate and the majority of failures are related to time since overhaul.

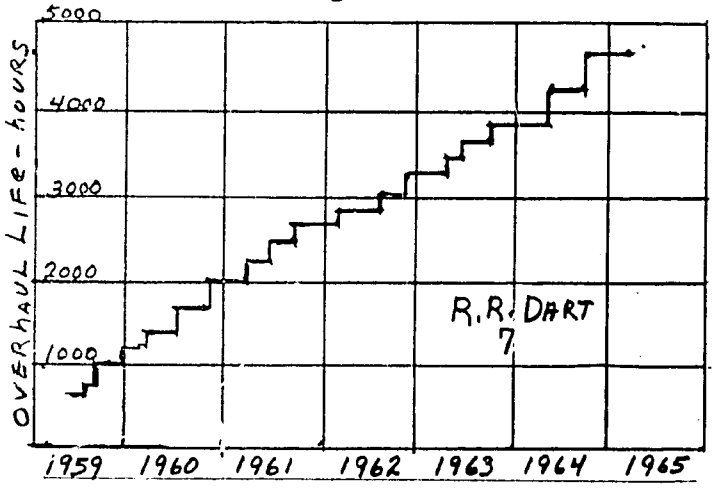
This is not the case with turbine engines as can be seen by looking at the development period of the R.R.Dart - After a relatively high engine removal rate during the introductory period, the rate dropped rapidly and stayed approximately level at 0.2 per thousand hours for a period of 7 - 8 years, despite the tremendous increases in times between overhauls.

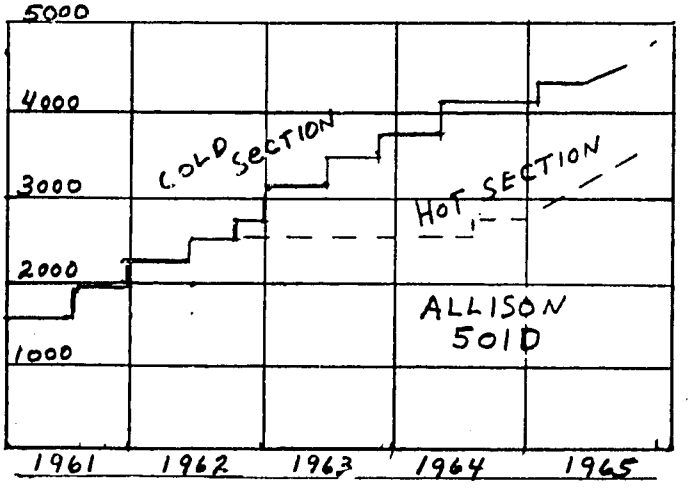


COMPARISON OF T. B. O.

	1962 Av.	1963 Av.	
R-2800 CB16	2208 hours	2208	(AA,EAL,NWA,WAL)
ALLISON 501D	2675 "	3325	(" " " ")
R.R.DART	3100 "	3600	(BAL, PAL, PAI, WCA, CAL)

Note: The 1963 T.B.O. figures for the R.R.Dart and Allison 501 D indicated that further development was likely. This development has materialized as can be seen from the following charts.





MAINTENANCE ADVANTAGES OF TURBINE POWER

1. Extremely low engine maintenance cost.
2. Proven high degree of reliability.
3. Greatest efficiency at high altitudes.
4. Ability to deliver sustained climb power without adverse effects on engine reliability.
5. Uses local fuel.
6. Reduced vibration results in reduction of malfunctions of aircraft components.
7. Dependable on short haul operation - Frequency of T.O. power has no adverse effects.
8. Extremely clean engine operationally.
9. Low line maintenance required per flight hour.
10. Simple ignition system in contrast to complicated system required for piston engines - 4 components as compared to 40.

II. WHICH AIRCRAFT SHOULD BE REPLACED?

Although it would be desirable to replace all LAB's passenger aircraft with turbine equipment, the feasibility of such a replacement program would be questionable.

This study, therefore, involves a limited replacement proposal which: 1) is within the capabilities of potentially available financing and 2) shows the greatest attainable economic gains per investment dollar.

Any combination of the turbine aircraft as discussed in this study will permit some replacement of DC-3 equipment but the primary replacement target is the DC-6. This is entirely logical since replacing the DC-6 would effect the most significant reductions in LAB's operating cost.

III. ANALYSIS OF THE DC-6B

The DC-6 was designed as a medium to long haul airplane and its introduction, with other contemporary aircraft, established a new standard of airline service for that era.

The heyday of the DC-6 lasted for some time - A tribute to its good design and basic integrity.

Eventually the introduction of the more efficient and more capable turbine aircraft displaced the DC-6 in the prime long haul market. As turbine fleets increased the DC-6 was forced farther and farther toward a short haul role, a role for which it is entirely unsuited.

Today the DC-6 is rapidly reaching the category of "neither fish nor fowl". Its performance leaves too much to be desired for long haul operation and it is entirely out of its element on short hauls. This accounts for the "bargain" price tags on DC-6 equipment.

THE DC-6B IN LAB OPERATION

OPERATING COST: Ana analysis of the DC-6B in U.S. carrier operation shows that direct operating costs of this equipment has progressively increased year by year.

In 1960 the average D.O.C. for the DC-6B on UAL & AA (two of the biggest DC-6 users) was slightly less than $1.20 per mile. By 1964 it had risen to slightly more than $1.50 per mile.

LAB's direct operating cost of the DC-6B is substantially higher than that of the U.S. carriers principally because of higher fuel, oil and engine costs.

FUEL, OIL & ENGINE COST COMPARISON

	U.S.Trunks	LAB
Gas	16.4 per gallon	.37 per gallon (system av.)
Oil	.60 " "	1.35 " "
Engine O.H.	$11,500	$18,000

FUEL, OIL & ENGINE OH. COST PER MILE

	At U.S. Trunk Cost	At LAB Cost
Gas	30.5 per mile	.69 per mile
Oil	.03 " "	.08 " "
Engine O.H.	.17 " "	.25
	50.5 cents per mile	1.02 per mile

The comparison shows that LAB's higher cost of these three items will alone boost the direct operating cost of the DC-6B by 51.5 cents per mile.

THE DC-6B IN INTERNATIONAL OPERATION: LAB's DC-6B's are at their best in the international operation. Whether their best is good enough is a matter which needs exploring.

Aside from the high operating cost and certain other disadvantages the DC-6B lacks the performance desired for international routes. Greater speed is required on the transcontinental operation in order to shrink the time factor so as to allow more favorable departure times and, arrival times that do not impinge on that part of the day associated with deteriorating weather conditions. The engine out performance of the DC-6B is also insufficient to meet IFR minimum altitude requirements on some segments. (Particularly on the Lima-La Paz segment).

THE DC-6B IN DOMESTIC OPERATION: On LAB's domestic operation the DC-6B is at its absolute worst. All the shortcomings of this airplane in short haul operation are magnified because of the prolonged climbs and extensive use of high blower.

This not only taxes the engines but increases their voracious appetite for the high priced fuel.

The extent to which operating costs of the DC-6B are increased on domestic routes is partially illustrated by the following facts:

	LAB INTERNATIONAL OPERATION	LAB DOMESTIC OPERATION
Average speed	250 MPH	223 MPH
Fuel consumption	375 gals. per hr.	475 gals.per hr.
Aviation gas cost	.34 per gallon	.39 per gallon
Fuel cost per hour	$127.50	$185.25
Fuel cost per mile	.51	.83

Fuel costs alone will account for an operating cost differential (between international and domestic) of 32 cents per mile. All other aircraft operating costs on domestic operation will be approximately 12% higher than on international.because of the difference in speed, (actual miles oovered per hour). This does not include costs due to extra wear and tear on aircraft components due to short haul operation.

DC-6B RELIABILITY: The reliability of the DC-6B is considerably less than passable in LAB's operation. This lack of reliability results in an excessive number of trip cancellations and delays. These cancellations and delays together with required airlifting of repair parts represent substantial losses or costs that are not fully assessed against the guilty aircraft.

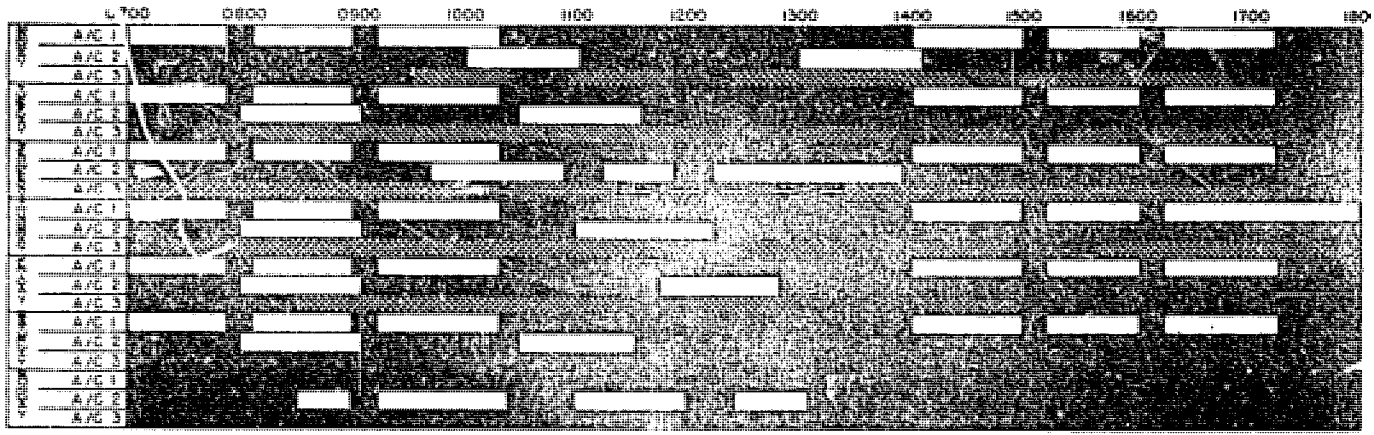
The unreliability of the DC-6B is evident from the following data covering a six month period of operation.

Month ('64)	Delays	Cancellations
July	31	LP-CB (2); CB-CZ (5)
August	17	CB-CZ (2); LP-TR-RI-CB (1)
September	29	LP-CB (2); CB-CZ (2)
October	31	LP-CB (1); CB-CZ (2)
November	16	LP-CB (2); CB-CZ (2); LP-TR(1)
December	23	LP-CB (4); CB-CZ (2)
Total	147 delays	28 cancellations

DC-6B ENGINE IN-FLIGHT SHUT DOWN RATE - 1 per 160 A/C hrs. (1 per 560 engines).
Note: Current in-flight shut down rate of R.R.Dart 1 per 33,000 engine hours.

SCHEDULED UTILIZATION (3 DC-6B'S)

TIME ON GROUND DURING WORKING DAY
PRODUCTIVE TIME (DOMESTIC)
PRODUCTIVE TIME (INT'L)



WEEKLY SCHEDULED UTILIZATION IN HOURS

1 DC-6B (INT'L)-------- 41:00 HRS.
2 DC-6B^S (DOM.)--------50:10 "
TOTAL 91:10 HRS.

DAILY AVERAGE UTILIZATION - 1965 (ACTUAL)

	JAN.	FEB.	MAR.
CP-698	5:05	4:52	5:43
CP-715	3:02	5:31	4:15
CP-740	2:44	1:52	1:52

IV. REPLACEMENT AIRCRAFT

Based on practical experience and operational analyses the aircraft that most merit consideration are:

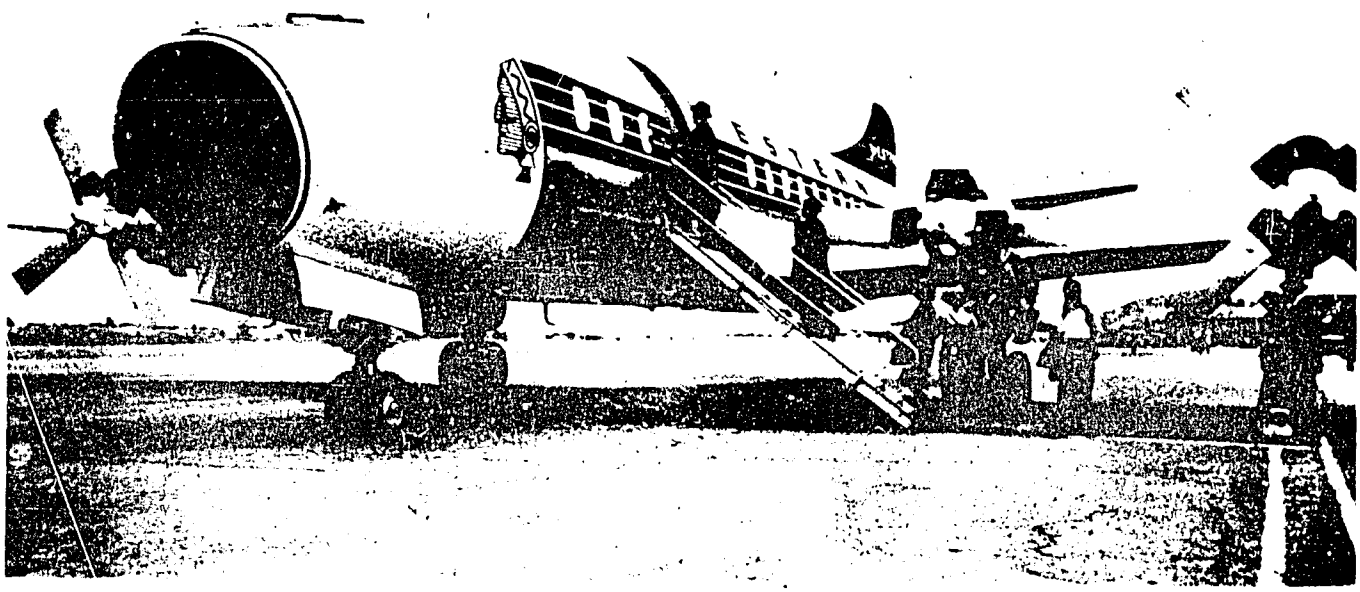
1. International routes - Lockheed Electra
2. Domestic routes - Convair 580 or F-27 (227)

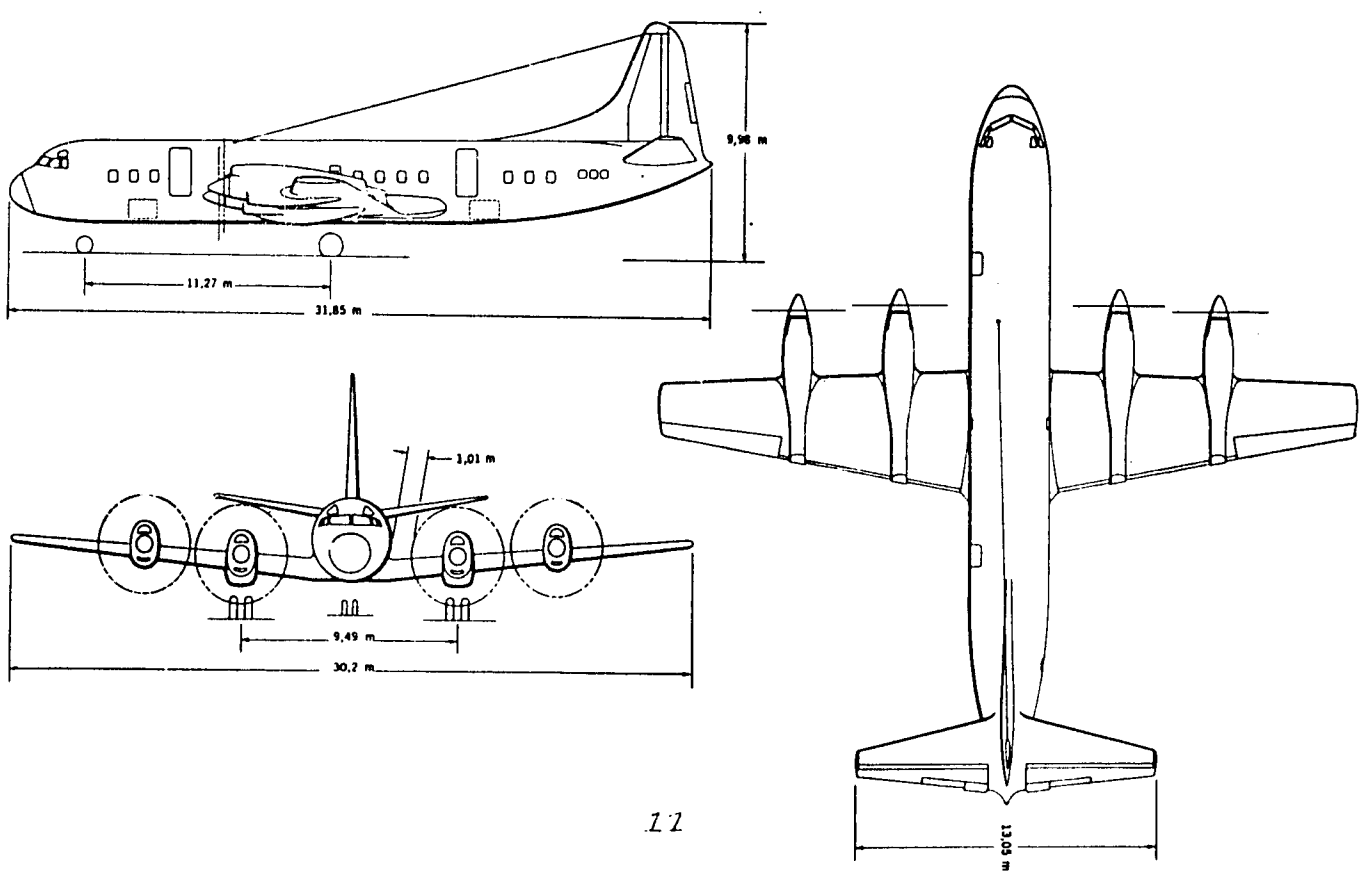
The following advantages are common to all these aircraft:

1. Independence from ground support.
2. Ability to use locally produced fuel.
3. Easy to service.
4. Excellent reliability.
5. Superior performance.
6. Economy of operation.

All of these aircraft possess characteristics that are particularly desirable in LAB's operation -- each of these aircraft has certain distinctive merits which are discussed in the following descriptions.

LOCKHEED ELECTRA





V

LOCKHEED ELECTRA

The Lockheed Electra, powered by four Allison turbo prop engines of 3750 H.P. ea., was designed as a modern replacement for aircraft in the DC-6 category.

The Electra was highly successful because it offered the reliability, economy and performance associated with turbine power plus the capability of operating into any airport suitable for DC-6 operation and with fewer restrictions.

The Electra is approximately the same size as the DC-6B but any similarity ends at that point.

The Electra's climb performance, payload, range, adaptability to a variety of stage lengths and speed (over 100 MPH faster) are vastly superior to the DC-6B. The Electra also has self-contained features which coupled with ease of servicing substantially diminishes ground time at turn-around or enroute stops.

At the present time, the Electra is considered as the most logical replacement for the DC-6B on LAB's international routes for the following reasons:

1. Its speed, range, capacity plus the ability to operate out of La Paz, Cochabamba and Santa Cruz with excellent payloads would permit the improvements in operation that are considered vitally necessary.

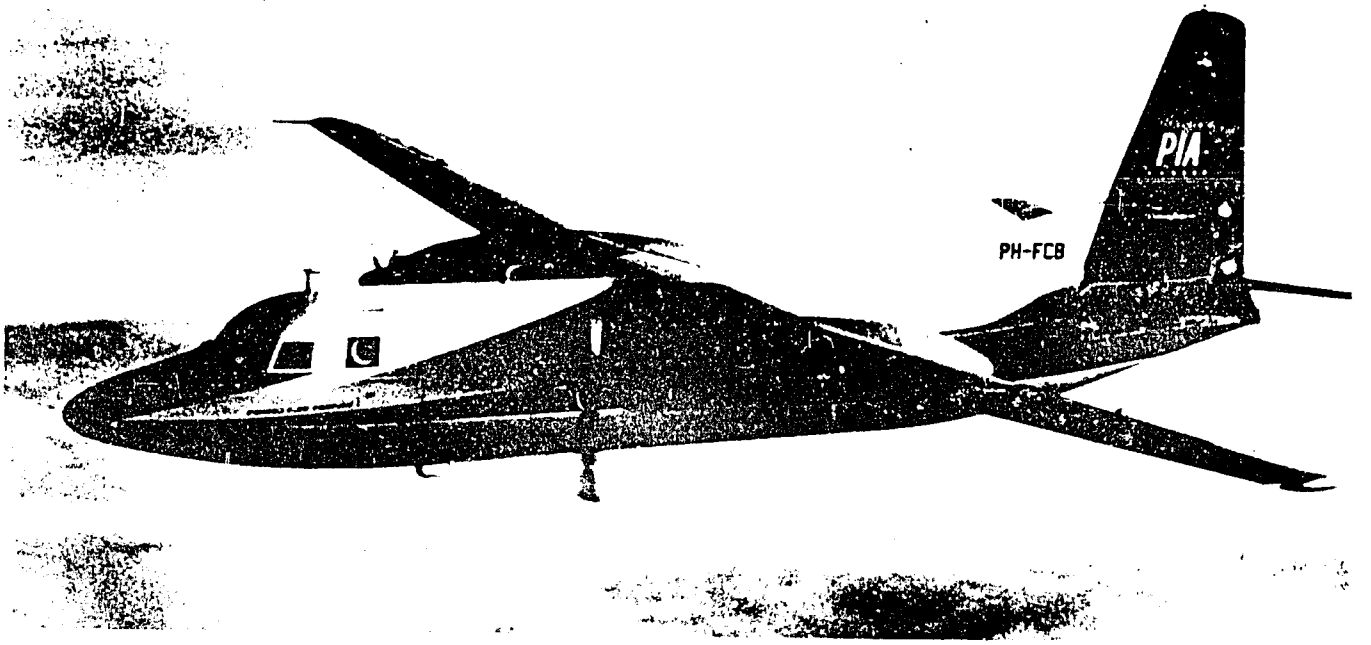
2. It would be relatively easy to integrate into LAB's operation.

3. The forecast availability of this equipment would allow plans for early acquisition.

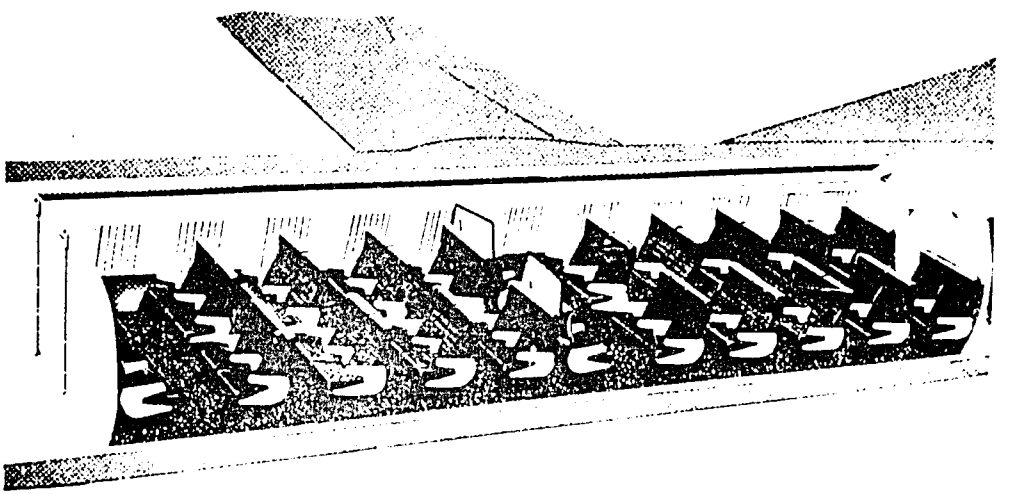
4. It should be available at an attractive price.

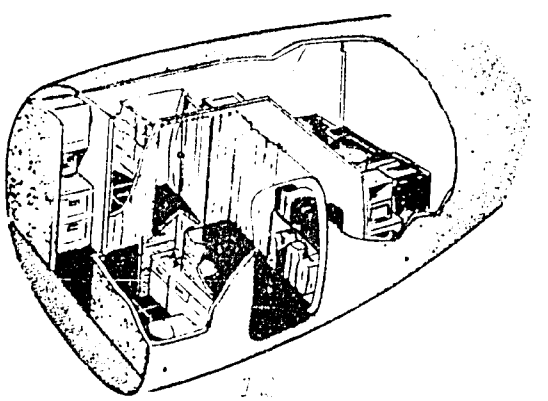
Actually, it is difficult to find an aircraft that could equal the Electra's general adaptability to LAB's prime hauls. Based on available data, the only aircraft that could do better is the Boeing 727, but the 727's high cost and unavailability eliminate it from consideration at the present time.

F-27



FH-227 INTERIOR





V

FAIRCHILD F-27 (227)

The F-27, powered by two Rolls Royce Dart turbo prop engines, is a high wing monoplane with a pressurized cabin and fully retractable tri-cycle landing gear.

The F-27 was specifically designed to meet airline needs for a modern, efficient short haul aircraft. The success of this aircraft in meeting design requirements is apparent from its popularity--at the present time, operators of F-27 equipment include 44 airlines, 36 corporations and seven governments.

The airframe design of the F-27 makes extensive use of the "REDUX" bonding process to produce a structure of maximum strength and minimum weight.

This bonding process is a prime factor in the very high times achieved between airframe overhaules and in the very low cost of these overhauls.

A unique feature of the F-27 is its pneumatic system which supplies pressure for actuating landing gear, passenger loading door, prop brakes, nose wheel steering and wheel brakes.

The use of the pneumatic system in lieu of hydraulics allows a reduction in wight and eliminates the possible fire hazard attendant with hydraulics. The pneumatic system also increases reliability because small leaks, which would eventually exhaust a hydraulic reservoir, will not interfere with the aircraft's completion of schedule.

Other notable features of the F-27 include:

1. High wing design which gives exceptional propeller ground clearance and permits ground level cargo loading.

2. Air conditioning which is effective on the ground as well as in flight.

3. An auxiliar power unit which eliminates need for ground power.

4. Good rough field characteristics.

5. Advanced "Jet Age" systems.

6. Exceptional reliability and exceptional airframe life.

LAB has been actively interested in the F-27 for some time. In 1961, they ordered two of these aircraft but were unable to take delivery because of financing difficulties.

In August, 1963, the Fairchild demonstrator F-27 made an extensive tour of South America which included extensive demonstration flights over LAB's system.

During this time, LAB had the opportunity to evaluate the F-27's performance at Cochabamba, La Paz, Rurrenabaque, Sucre, Tarija, Villamontes and Camiri.

A subsequent report written by LAB's Superintendent of Operations indicated enthusiastic satisfaction with the F-27's capabilities in LAB's operations.

The F-27's performance and payload is satisfactory even at La Paz (most critical from standpoint of elevation and payload requirements) although the gross weights computed by Fairchild's engineers were based on equipping the aircraft with stand-by Jato power.

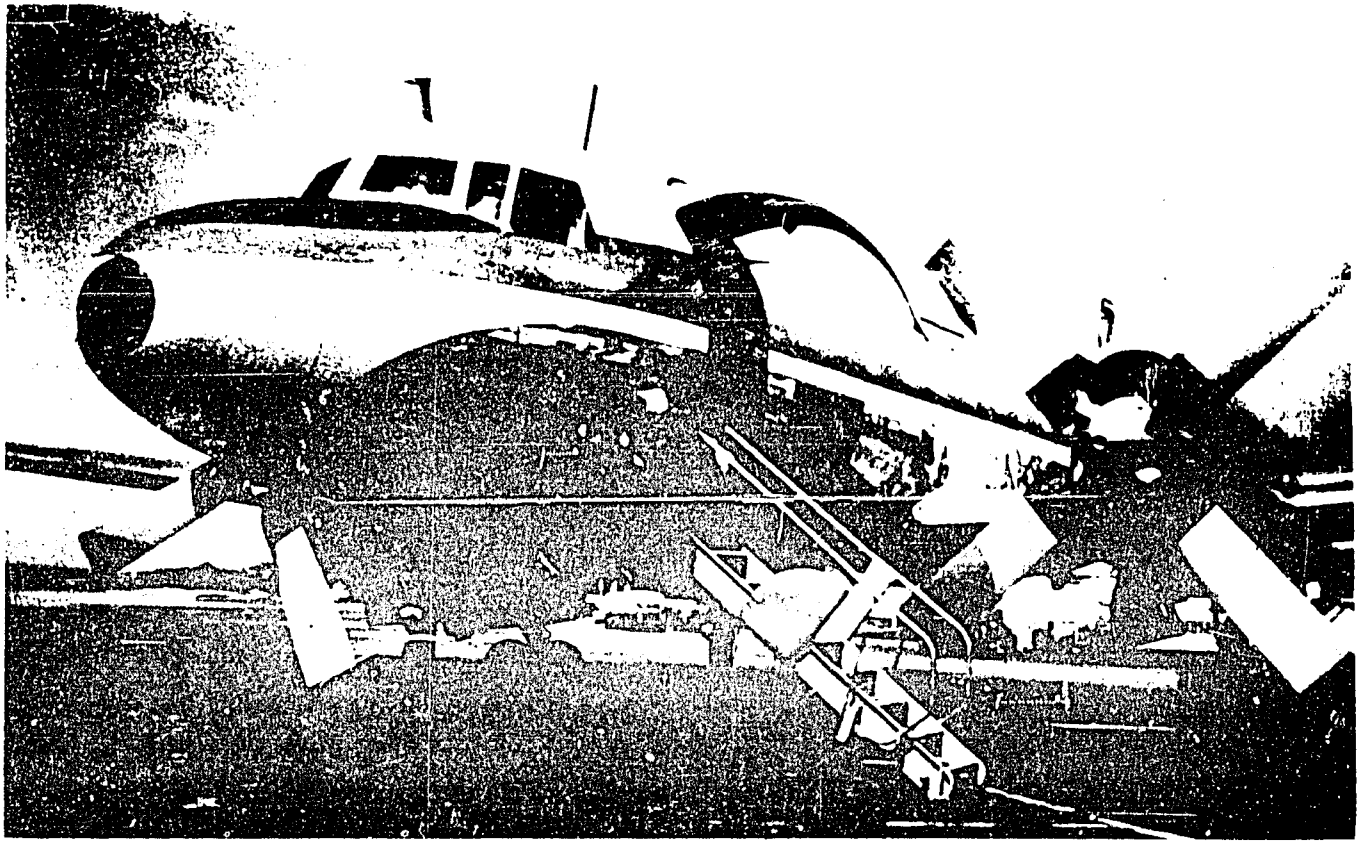
During the past two years the F-27 has been improved upon in many ways. A later model Dart engine produces 140 more H.P. which will be reflected in higher payloads. Gross weights have also been increased.

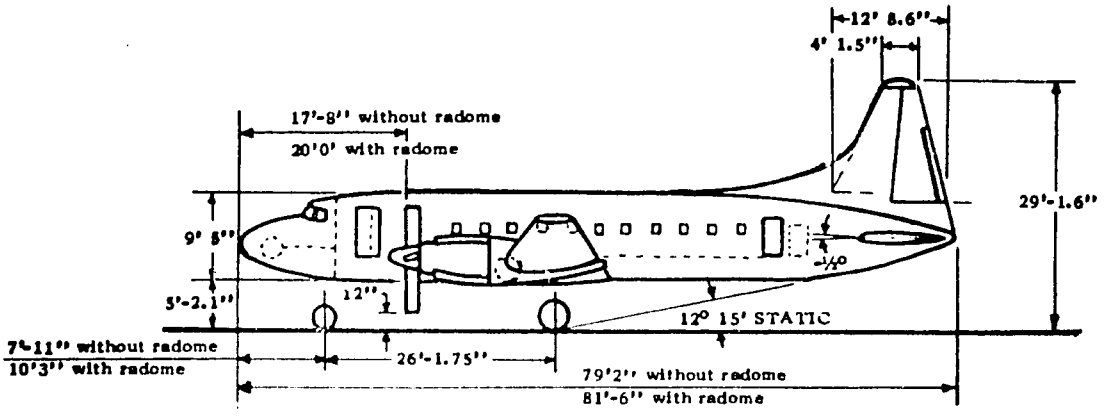
The F-27 is now available in a streched version (227) which will accommodate up to 52 passengers. Movable bulkheads allow variations in ratio of cargo to passenger capacity which would be especially desirable in LAB's operation.

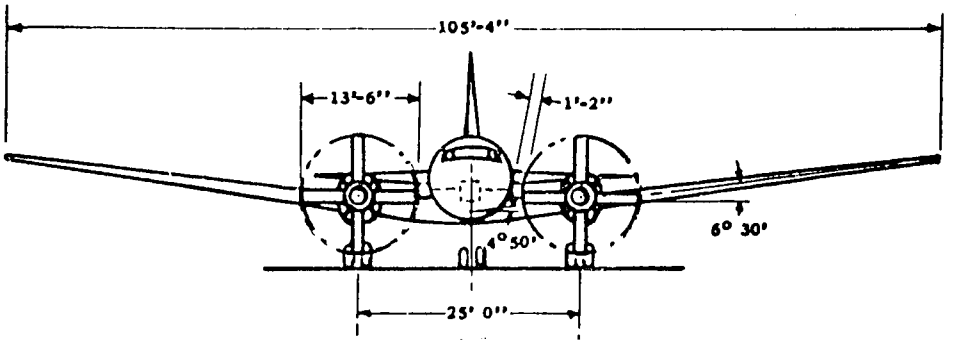
The F-27 offers an excellent combination of performance and adaptability. It can replace the DC-6B on domestic routes and the aircraft's ability to operate from marginal airports would permit utilization on current DC-3 schedules.

Although the F-27 cannot match the CV580 in performance or payload, it would be the logical choice if total replacement of DC-3 equipment was considered.

CONVAIR "580"




12' 8.6"
4' 1.5"
17'-8" without radome
20'0' with radome
29'-1.6"
9' 8"
-1½°
5'-2.1"
12"
12° 15' STATIC
7'-11" without radome
10'3" with radome
26'-1.75"
79'2" without radome
81'-6" with radome


105'-4"
13'-6"
1'-2"
6° 30'
4° 50'
25' 0"

V

C O N V A I R 5 8 0

The CV-580, powered by two Allison 501D turbo prop engines, is the most capable twin prop jet aircraft available at the present time.

Basically, the CV-580 is a CV-340/440 converted to turbine power. The CV-340/440 is universally recognized as one of the finest aircraft of its type ever produced.

The entire structure of the 340/440 was designed for weights and speeds above original certificated values so as to accommodate future installations of turbine engines with greater performance and power.

The mating of the time proven CV-340/440 with Allison 501D turbo prop engines provides, at a modest cost, a smooth and quiet, jet age aircraft with power plants of highest reliability.

The brilliant performance of the CV-580 is readily understandable when considering the fact that the Allison engines used in this conversion are over 50% more powerful than the piston engines they replace.

The CV-580 is ideal in size for accommodating 44-52 passengers and the efficient layout of its interior provides comfortable seating plus good cargo space.

The performance, economy and fast ground handling characteristics of the CV-580 make it an ideal replacement for the DC-6B in domestic operations. Its economy would also permit renewal of service that was suspended on account of the uneconomic aspects of the DC-6B. Domestic airports that could be served by the CV-580 include: Cochabamba, La Paz, Santa Cruz, Trinidad, Riberalta, Guayaramerin, Corumba, Yacuiba, Tarija and Sucre (if extended as proposed).

VI. C O M P A R I S O N S

(DC-6B - F-27 - CV-580 - Lockheed Electra)

Segment	Off-On Time				Off-on Speed (MPH)			
	DC-6B	F-27	CV-580	Electra	DC-6B	F-27	CV-580	Electra
CB-LP	:44	:43	:37	:29	217	223	260	330
LP-CB	:38	:37	:35	:28	252	254	273	343
CB-CZ	:54	:50	:44	:35	220	239	272	342
CZ-CB	:59	:55	:45	:37	202	217	265	324
CB-TJ	1:15	1:13	1:05	--	240	247	278	--
TJ-CB	1:18	1:18	1:06	--	232	232	274	--
TR-CB	1:06	:56	:45	--	191	225	280	--
TR-RI	1:15	1:08	:56	--	213	235	285	--
RI-GY	:17	:15	:14	--	176	200	126	--
GY-TR	1:15	1:09	:56	--	216	235	288	--
LP-TR	1:05	1:02	:55	--	238	248	290	--
LP-AR	:56	:48	:42	--	210	245	280	--
AR-LP	:57	:53	:44	--	207	222	267	--
LP-LIM	2:55	--	2:25	2:04	253	--	305	355
LIM-LP	2:53	--	2:24	2:02	256	--	308	360
CZ-SAO	4:27	--	3:45	3:10	262	--	312	370
SAO-CZ	4:58	--	3:55	3:18	235	--	300	355
CZ-BA	4:52	--	4:00	3:20	256	--	312	374
BA-CZ	5:18	--	4:10	3:30	235	--	300	356

AIRFRAME & ENGINE OVERHAUL COST COMPARISON

	DC-6B	F-27	CV580	Electra
Time between airframe O.H. (hrs.)	16,000	14,000	12,000	14,000
Av. Airframe O.H. Cost $	140,000	6,700	26,000	31,500
Airframe O.H. Cost per flight hour $	8.75	0.55	2.17	2.25
Time between engine O.H.(hours)	1,800	3,800	2,800	3,800
Overhaul cost per engine $	18,500	13,144	23,500	23,500
Engine overhaul cost per aircraft hour $	41.12	6.92	16.79	24.80

Note: DC-6B airframe overhaul in 4 blocks of 4000 hours ea.

VII

COST COMPARISON ON PRESENT DC-6B ROUTES

A N N U A L

International

	DC-6	Electra
Mileage	487,552	487,552
Cost per mile	$ 1.8019	$ 1.4579
	$ 878,520	$710,802

Domestic

	DC-6	F-227	CV-580
Mileage	529,880	529,880	529,880
Cost per mile	$ 2.1211	$ 1.1907	$ 1.0932
	$1,123,928	$630,928	$ 579,265

Total

	DC-6	Electra F-227	Electra CV580
International	$ 878,520	710,802	710,802
Domestic	1,123,928	630,928	579,265
	$ 2,002,448	1,341,730	1,290,067

Annual savings with DC-6B replacement:

Electra-F-27 combination	$660,718 per yr.
Electra-CV580 combination	$712,381 per yr.

The above figures represent positive savings that can be immediately achieved by replacing the DC-6B as indicated. They do not include additional savings that would certainly be realized through increased reliability and utilization.

VII

FLIGHT HOUR COMPARISON ON PRESENT DC-6 ROUTES

A N N U A L

Present Aircraft	Scheduled Miles	Speed of Aircraft	Flight Hours
DC-6 International - - -	487,552	249	1,958.04
DC-6 Domestic - - - - -	529,880	223	2,376.14
Total	1,017,432		4,334.18
Electra - F-227			
Electra - - - - - - - - -	487,552	335	1,455.38
F-227 - - - - - - - - -	529,880	230	2,303.83
Total	1,017,432		3,759.21
Electra - CV-580			
Electra - - - - - - - -	487,552	335	1,455.38
CV-580 - - - - - - - - -	529,880	275	1,926.84
Total	1,017,432		3,382.22

AVAILABLE SEAT MILE COMPARISON ON PRESENT DC-6 ROUTES

A N N U A L

Present Aircraft	
Available Seat Miles - International - - - -	32,178,300
Available Seat Miles - Domestic - - - - - - - -	34,972,080
Available Seat Miles - Total - - - - - - - -	67,150,380
Electra - F-27	
Available Seat Miles - International - - - - -	41,441,920
Available Seat Miles - Domestic - - - - - -	21,195,200
Available Seat Miles - Total - - - - - - - - -	62,637,120
Electra - CV-580 or F-227	
Available Seat Miles - International - - - - -	41,441,920
Available Seat Miles - Domestic - - - - - - -	27,553,760
Available Seat Miles - Total - - - - - - - -	68,995,680

VIII. PACKAGE COST

Without Spares

Electra - F-227

1 - Electra	1,500,000
2 - F-227 (1,420,000 ea)	2,840,000
Total	4,340,000

Electra - CV-580

1 - Electra	1,500,000
2 - CV-580 (1,100,000 ea)	2,200,000
Total	3,700,000

IX. CARGO AIRCRAFT

It is the opinion of the Aircraft Evaluating Committee that an aircraft replacement program should include an efficient replacement for the B-17.

At the present time, it appears that the cargo aircraft that could best meet LAB's requirements is the C-82 equipped with an auxiliar Jet engine.

The axuiliar Jet engine is used to obtain desired performance out of small or high altitude airports, for increasing engine out performance and during sustained climbs.

The C-82 equipped with turbo assist is available from Steward Davis Corp. under the name of Jet Packet. The cost of this aircraft, complete, is approximately $160,000.00.

The Jet Packet is capable of carrying large amounts of voluminous cargo or heavy machinery. Its versatility in transporting cargo of all descriptions makes it especially desirable for Bolivia.

Introduction of the Jet Packet would not only improve LAB's cargo transport capabilities, but would also permit considerable savings.

COST COMPARISON OF C-82 AND B-17

Present B-17 Routes

	B-17	C-82
Mileage	247,416	247,416
Cost per mile	1.3928	1.0108
	$ 344,601	$ 250,088

M A R K E T S T U D Y

F O R

L L O Y D A E R E O B O L I V I A N O

March 1965

E X H I B I T III

TABLE OF CONTENTS

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2	Objective	1
3	Limitations	2
4	Conclusions	2 - 3
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6	General Information	5 - 15

Exhibits

General Information Exhibits

Traffic Exhibits

A. Domestic Future Routes

B. International Future Routes

C. Community of Interest

SECTION ONE

Introduction. This report represents the results of a Market Survey conducted for Lloyd Aereo Boliviano by a group of five persons--two members of the North Central team and three people from LAB's Traffic and Sales Department.

Through this type of survey, the company has a better opportunity to analyze its existing routes, and those cities in its market area, with the potential for future service.

Although company management may have a great deal of knowledge about the area served, a report of this type puts down that knowledge in statistical form. This permits a solid base for decisions on future service, both domestic and regional.

We urge the company to consider utilizing this type of survey to analyze new areas for service before actual operations commence. Indeed, we feel that the company should undertake this type of study on a periodic basis (every two or three years) to evaluate the prospects of extending into areas previously by-passed.

SECTION TWO

Objective. The objective of this study is outlined in the contract between North Central Airlines, Inc. and USAID. Following is a quote from that agreement:

> "H. Market Survey
>
> Contractor shall make a complete survey of LAB's regional and domestic markets. Such a survey shall serve as a basis for policy decisions designed to lead to the most efficient utilization of LAB's equipment, facilities, and organization. The survey shall include such considerations as the routes needed to best serve the present and future development of the Bolivian economy, the relative profit of existing or potential routes...."

Greater emphasis was placed on potential routes than on existing segments. With LAB's excessive number of employees it was deemed wise to think in terms of expanding the geography served by the organization; thus absorbing some of the excess personnel. Further, it was felt important to take a "good hard look" at the Altiplano, the area containing 70% of Bolivia's population and presently lacking air service.

SECTION THREE

Limitations. The limitation of the material contained in the study is that some of the statistical data contained in the section "General" is quite old. Current data simply was not available to the study group. Further, in some cases two different sources gave conflicting information. The study group tried to select the material that appeared to be the most accurate.

In the cost estimates DC-3 and DC-6B expenses were used. This does not mean that the study group is suggesting the reinstatement of service over the Altiplano with DC-3 aircraft. The costs must be reworked for the type of aircraft to be used for this service.

Finally, information for a study of this type that is readily available in other parts of the world simply is not available in Bolivia.

SECTION FOUR

Conclusions.

New Routes and Revisions to Present Operations.

Lloyd Aereo Boliviano presently serves only slightly more than 23% of the total population of Bolivia (Exhibit G-32). There is not now, nor has there been for several years service to the Altiplano region. This area contains roughly 70% of the population of the country. Thus, in studying the possibilities of expanding the system we looked very hard at this area. It should be pointed out that, although the group suggests the possibility of service to this area, they in no way mean to imply that service should be re-established in the Altiplano with DC-3 aircraft, or any aircraft that does not have the capability to operate safely at these altitudes.

It appears from the data presented in the report that LAB now serves (from a schedule pattern standpoint) its routes in the most efficient and practical manner. The group does not recommend any adjustments in the service pattern beyond those already being planned by LAB.

A case can be made, however, to extend LAB service into the following cities: Oruro, Potosi, Uyuni, Tupiza, Villazon and Vallegrande domestically, and to Arequipa and Cuzco, Peru, internationally. The domestic cities would require 3 new routes while the international cities would become intermediate stops on the company's Lima-La Paz segment. There is relatively little circuity involved in serving Cuzco and none in serving Arequipa. Exhibit IF-8.

The study group feels that a success could be made in all these cities if LAB provides round trip service on a reliable basis and makes an effort to sell the service. This will take a considerable advertising effort and a concentrated "face to face" public contact program which LAB does not have at this time.

SECTION FIVE

Explanation of Exhibits.

The study group experimented with several standard types of methods for forecasting traffic at new points. One of these was number of passengers generated per 1,000 persons of population. When applied on a national basis and projected to cities where traffic production was known, this did not prove out to actual experience. Thus, the group settled on using "number of passengers generated per telephone or telegraph message." Four communities were taken, each with slightly different characteristics. Exhibit DF-8.

These cities were then placed in their appropriate population group, Exhibit DF-6, and their index applied to that group of cities. The index was proved with known traffic over several segments selected at random, Exhibit DF-7, and again for the total LAB system, Exhibit DF-41. The percentage of error for the total system was only slightly more than 5%. The group felt this was adequate for its purposes.

The index was then applied to each of the cities showing a community of interest with the larger cities in Bolivia, as shown in the Traffic Exhibits. Those communities not indicating any community of interest were eliminated from further consideration by the group.

Passenger and cargo traffic were then projected and applied to the various segments. Exhibits DF-32 and DF-33. Note that the group produced one exhibit for one round trip weekly and another for two round trips weekly, Cochabamba-Oruro and La Paz-Cochabamba via Potosi, Sucre and Oruro.

In the International Section another method of forecasting was used because the telegraphic message data was incomplete and questionable as to accuracy. Thus, hotel registrations and known Arica, Chile, traffic were used as a base. Exhibit IF-5 shows the history of Arica for traffic and hotel registrations. However, the air traffic comparison was distorted somewhat by a DC-6B accident and diplomatic problems between Bolivia and Chile. Thus, Arica traffic was weighted by the known system decrease of passenger traffic and an index developed. This index, Exhibit IF-5, was applied to the hotel registrations for each city under study. Sufficient traffic did not appear to be available to any areas except Cuzco and Arequipa, Peru. This estimated traffic was then applied to Exhibit IF-8 and a Revenue and Expense forecast made.

SECTION SIX

General Information.

It is interesting to note that while virtually every phase of the Bolivian economy has been growing since 1959, LAB has been sliding downhill. Exhibit G-29 shows several categories of the national economy, such as population, Gross National Product, Production and Consumption as having grown anywhere from a low of 10.5% (Population) to a high of 21.8% (consumption). During the same period LAB declined in passenger kilometers 6.4% and in cargo ton kilometers 16.3%. At the very least, the company should have maintained the same pace as population growth in its passenger traffic. The Gross National Product, Exhibit G-33, shows a growth of 19.2% from 1958 through 1963. LAB's traffic went downhill. This failure to improve at the same rate as the country's economy generally, indicates a passive selling and promotion attitude on the part of LAB. Indeed, in order to lose traffic, they must have actually discouraged customers.

At the same time, the group feels other factors were at work. Exhibit G-14 shows a definite increase in the number of registrations of multi-engine aircraft beginning in 1959. This increase in competition certainly contributed to the reduced traffic experienced by LAB. On the other hand, these aircraft probably would not have been brought to Bolivia had LAB been providing adequate service in 1958 and 1959.

To further complicate the competitive picture, TAM, the military carrier, began carrying commercial traffic. The study group actually purchased revenue tickets on this carrier over the same routes LAB operates at a highly reduced tariff. Exhibit G-35.

The group strongly recommends, as the North Central team of advisors has been doing for many months, that action be taken immediately to curb the commercial activities of TAM. To be sure, they provide a needed service to many communities that do not benefit from regularly scheduled air service, but they should confine their activities to this service and those needed to supply military outposts.

It is inconceivable to the group why the Government subsidizes two carriers and then permits them to operate over the same routes in competition. To our knowledge, this is not permitted anywhere else in the world.

Aviation experts are apparently in complete agreement with this philosophy. The following quote is taken from the "Bonnalie Report" (Survey of the Aviation Industry of Bolivia): "It is strongly recommended that means be found to support the military transport (TAM) without their being put into competition with commercial carriers."

Lloyd Aereo Boliviano does not need, nor does it want a monopoly for air service in Bolivia. What is desperately needed for the carrier is a method of regulating and enforcement of those regulations for all air carriers operating in the country. Presently the non-scheduled carriers have complete freedom in the selection of routes, frequencies and tariffs. Obviously their activities center around the high traffic generating points, or those served by LAB. The effect of this competition and that of TAM can be seen in Exhibits G-12, G-13, G-34 and G-35.

What must be done is to establish regulations and enforcement of the following or all carriers operating in Bolivia:

1. Tariffs, passenger and cargo.
2. Restrictions on frequency of service over designated routes.
3. Regulations on segments to be operated by each carrier.

4. Establish public hearings on the above points and on new carrier applications permitting interested parties to present points of view.

Prior to the year 1964, traffic on LAB appears to have reached a plateau and in fact it even started downward. In addition to the competitive aspect and what appears to have been a passive attitude on the part of employees the group feels this situation was caused by two other factors:

1. Lack of public confidence in the carrier.
2. No sales promotion effort, coupled with a complete disinterest in the welfare of the customer.

These two factors probably account for the rapid growth of non-scheduled operators. Because of the lack of a reporting system for traffic, statistics of these carriers are not available. The group feels, however, that Exhibit G-14, speaks for itself. Indeed, in February, 1965, a new non-scheduled air carrier was formed who will eventually operate four B-17 aircraft. Regulation and Enforcement must be established to stop this pirating of LAB's traffic.

Bolivia and LAB are, generally speaking, prime examples of undeveloped potential. Aside from mining and petroleum, the country's resources have had little promotion. Tourism is an example of this. The country has tourist appeal, but little or no effort is made to develop it. Bolivia is not on the main travel routes of the world; thus, they do not benefit from exposure to tourists traveling through, nor do they benefit from the boost to their economy or to their national flag carrier that tourist money would provide.

Further, passengers who presently travel by surface means do not appear to have the characteristics of an airline passenger. In other words, they apparently have plenty of time for their journey. Travel times by surface in Bolivia are lengthy, dusty and frequently uncomfortable. Exhibit C-10 gives a resume of travel times over numerous segments in the country. Air, in every case, provides a substantial savings in time. Thus, we feel that surface is not a competitor in that their traffic generally is not "airline type".

Rail transport is very limited in its network and the rolling stock in use is dilapidated. The engine observed in use on the Santa Cruz-Yacuiba line, for example, was made in 1904. The rail bed on this line has been cut by the river, Rio Grande, and it is necessary, in order to traverse the route tc Yacuiba, to cross the river in barges at this point and board another train on the other side.

LAB Management has stated that they cannot use the rail service, Corumba-Santa Cruz to transport aviation gas because the train usually catches fire at least once during its journey.

The only two rail segments that may provide competition to LAB are between La Paz and Cochabamba and from La Paz to Arica.

It is important to note that with their low tariffs, every rail company in Bolivia is losing money at a substantial rate.

Road systems too are generally underdeveloped. The only hard surfaced road in the country runs for 336 miles between Cochabamba to Montero via Santa Cruz. Others are gravel and during the rainy season are frequently impassable. Exhibit DF-36 shows that most of the roads over the routes mentioned in section "Future Routes Domestic" are periodically closed to traffic.

Bolivia has almost 10,000 kilometers of navigable rivers. A great deal of cargo moves via this system but it is, for the most part, high cubic volume, low weight traffic that does not lend itself to air transport because of the higher tariffs.

All three forms of surface transport are underdeveloped and it is doubtful if they will offer serious competition to LAB for many years. It is obvious that the country needs a sound air transport system to fill its principal transport needs. LAB can fill that need if they are protected from unfair competition and if the employees will take on an "I am a public servant" attitude.

Few of the LAB employees read English. Yet, most of their trade magazines are written in this language. Isolation, or if you will, insulation from modern techniques and advanced methods and ideas have contributed to the poor performance of the company. The key employees should be scheduled for periodic visits to the "outside" to observe for brief period how other carriers operate in reservations, passenger handling, baggage handling and other customer relation areas.

Geography and Resources.

Bolivia is one of the two South American countries without a seacoast, the other being Paraguay, which adjoins Bolivia on the southeast. It has a land area of approximately 412,000 square miles (slightly larger than the combined area of Texas and New Mexico), which may be divided into three major regions: the Highlands (16 per cent of area), the Llanos, or great plains of the north and east (70 per cent), and the intermediate zone comprising the eastern slopes and valleys (14 per cent).

The Highlands are made up of two great mountain chains, the Western and Eastern Cordilleras, and the high plateau, known as the Altiplano, enclosed by the ranges. The Western Cordillera forms the boundary between Bolivia and Chile.

The Altiplano is a continuation of the intermountain region in Peru, extending 500 miles from Lake Titicaca to the Argentine frontier. It is a cold, semiarid region, having a general elevation of about 12,000-14,000 feet above sea level. This area contains approximately 70% of Bolivia's population!

Population and Employment

The population of Bolivia was estimated at 3,556,000 in 1962, as compared with the 1950 census total of 3,019,031. The 12-year increase of 537,000 gives an annual population growth of 1.18 per cent. According to the 1950 census 63 per cent of the population was classified as "indegenes", that is, illiterate persons following the Indian way of life. The rest of the enumerated inhabitants, or 37 per cent, are considered to be of a modern, socio-economic type. The semi-nomadic Indians of the forest, numbering about 87,000, were not covered by the 1950 census returns. Most of Bolivia's population is concentrated on the Altiplano and in the high valleys of the eastern slopes.

About two-thirds of the people of Bolivia make their living from farms, livestock, or forest products. The average yield is low and difficult to evaluate in monetary terms, since much of the activity is of a subsistance type. About 35 per cent of the Gross Domestic Product (GDP) is derived from agriculture. Mining and petroleum together account for 14 per cent of GDP, manufacturing production for over 15 per cent, and the balance derived from services. Although miners constitute only slightly more than 3 per cent of the total work force of about 1,400,000, mineral exports provide over 90 per cent of Bolivia's foreign exchange earnings.

Standard of Living

The majority of Bolivians live on a bare subsistence level. The per capita GDP in 1962 was estimated at from $98.8 to $111.5.

Agriculture accounts for about 35 per cent of Bolivia's GDP, Exhibit G-27, and employs about two-thirds of the nation's active population. The bulk of Bolivia's agricultural production is concentrated on the Altiplano where most of the people live. Other important agricultural areas are the Yungas and the Llanos, the latter embracing vast areas of undeveloped land suitable for a variety of agricultural uses. Corn is the most important single crop in Bolivia, in terms of acreage, followed by sugar, barley, potatoes, rice and wheat. Other crops include regional products, such as quinua and ocas, as well as fruits, vegetables, and peanuts. The production of coffee is increasing.

Most kinds of domesticated animals are produced in Bolivia, of which sheep and cattle are the most important.

The Agrarian Reform Law of 1953, designed to get the ownership and control of farm lands into the hands of the actual tillers of the soil, has greatly influenced agricultural developments in the country. An initial decline in the volume of production was followed by a gradual recovery and an encouraging outlook for the future.

The development of manufacturing in Bolivia has been limited by the small market, shortage of raw materials, fuel and power, the generally low level of technical skill, and the slow growth of an entrepreneurial and management group. Industry plays a small role in the economy of Bolivia, Exhibit G-23, G-24. Handicraft industries, working with limited capital and unskilled labor, have a very low level of productivity.

The production of textiles is the most important single industry, accounting for about one-third of the total employment in manufacturing, Exhibit G-24. The manufacture of foodstuffs and beverages, glass, ceramics, cement, and leather goods, account for most of the remainder. Newly established industries have included a tire factory, sugar refining, and the production of sulphuric acid. The expansion of manufacturing industries over the long term will depend largely upon the growth of the economy as a whole and on an improvement of the economic and political climate for private investments. Possibilities exist for a considerable diversification of industry, especially in the processing of domestically produced raw materials, such as sulphur, gas, jute, kenaf, peanuts, and soy beans.

The production of crude petroleum, which had expanded rapidly during the period from 1952 to 1958 held steady in 1962, see Exhibit G-27, as compared with the previous year, in spite of increased investments for the exploration of new oil fields. Production of refined products, however, increased by about 19 per cent.

Private Investment

During 1962 over 9 million dollars in foreign capital came to Bolivia, chiefly in mining, chemical industries, manufacturing, and animal husbandry. Of this total, Japan was by far the largest investor, with 85% of the total. The U.S. invested 10%, while Belgium had 2%, and Argentina, 1½%. All applications for investment in Bolivia must be made to the National Committee of Investments. As of February, 1962, there were some 55 American firms having substantial direct investment in Bolivia.

In 1961 gross investment was about 66 million dollars (15% of GNP), with probably a third by the public sector. Largest single private investment is by the petroleum companies, with nearly 32% of the total in 1961. Note, however, that oil

company investment is declining, both absolutely and relative to investment in other areas. Other areas of importance, by order of magnitude of investment, are mining and building construction.

Export Trade

Bolivian exports have declined considerably from the Korean War-induced high of 1951. This is due not only to falling prices but also due substantially to the economic problems that Bolivia has faced as it attempts to reconcile its hopes of economic development with social reforms initiated by the Revolution of 1952. More specifically, labor difficulties in the all-important tin mines have created definite problems, while the economic resources needed to put the mines on a more solid economic foundation have been lacking.

The importance of tin exports can be seen in the fact that tin accounted for 65% of total exports in 1961. Total mineral exports amounted to 90% of all bolivian exports, see Exhibit G-17, G-20.

Of Bolivia's total exports in 1962, 54% went to Great Britain, 30% went to the U.S., and 6% went to the Federal Republic of Germany. It is hoped that liberalized mining laws will attract private foreign capital into tin and other import minerals.

Two areas of possible export importance are petroleum and rubber. Gulf Oil Company is currently developing three fields in the Santa Cruz area. The Bolivian-American Tire Co. (Cochabamba area) has signed a contract with an American tire manufacturer under which the latter agrees to purchase all the Bolivian rubber which the company can supply at world prices.

Import Trade

The more important Bolivian imports in terms of value include: wheat flour, mining machines and accessories; pharmaceutical specialties; automobiles; trucks, vehicle equipment and parts; sugar; iron pipe, tube and fittings. Exhibit G-18.

As Bolivian agriculture progresses, there is a good chance that its wheat flour and sugar imports (as well as other, less important imports) will decline. In particular the sugar industry near Santa Cruz will very likely make the country self-sufficient in this commodity, Exhibit G-22. Indeed, the capacity presently exists to produce enough sugar for Bolivia's needs; however, the cost is high, and it apparently is still cheaper to import this product.

The Japanese colonies near Santa Cruz have developed considerably in the last few years and their production of rice is presently enough to satisfy the needs of the country, Exhibit G-22. But, here again, the situation exists where it is apparently cheaper to import the product.

As efficiency improves, imports of these two products will drop drastically. It is reasonable to expect, therefore, that air transport traffic will grow at an equivalent or greater rate.

One of the more interesting areas of development is the re-colonization of many Altiplano families to the rich agricultural areas north of Santa Cruz. The study group made several attempts to secure detailed information on this program, including a visit to the area. Data simply was not available, or, if it was, Corporacion Boliviana de Fomento (CBF) would not release it to the group.

We did learn, however, that eventually there will be 2,000 transplanted families located between the cities Guabira and Todos Santos. LAB should watch this development closely and possibly plan service to an area airport. The location of the airport will be dependent on the eventual center of population.

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C. COMMUNITY OF INTEREST

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CA-3 Capacity of La Paz Hotels
CA-4 30 Day Study of Telegraphic Messages
CA-5 Student Registrations
CA-6 Bank Transfer Study
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(2) Cochabamba

CB-1 Hotel Count
CB-2 Estimated Total Hotel Registration of Passengers
CB-3 30 Day Study of Telegraphic Messages
CB-4 Student Registrations
CB-5 (not used)
CB-6 Vehicular Movement
CB-7 Mail Dispatch Study
CB-8 Rail Passenger Traffic
CB-9 Truck Freight Rates

(3) Santa Cruz

CC-1 Hotel Count
CC-2 Estimated Total Hotel Registration of Passengers
CC-3 Capacity of Santa Cruz Hotels
CC-4 30 Day Study of Telegraphic Messages
CC-5 Student Registrations
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CD-1 Hotel Count
CD-2 Estimated Total Hotel Registration of Passengers
CD-3 30 Day Study of Telegraphic Messages
CD-4 Rail Passenger Traffic

(5) Potosi

CE-1 Hotel Count
CE-2 30 Day Study of Telegraphic Messages
CE-3 Vehicular Movements
CE-4 Rail Passenger Traffic

(6) Sucre

CF-1 Hotel Count
CF-2 30 Day Study of Telegraphic Messages
CF-3 Vehicular Movements
CF-4 Summary of Hospital Registrants

EXHIBIT G-1

POPULATIONS OF SELECTED CITIES IN BOLIVIA

	City	Province
La Paz	352,912	
Cochabamba	92,008	
Santa Cruz	72,708	
Apolo	7,057	18,694
Bermejo	2,072	13,951
Camiri	6,918	46,423
Culpina	5,369	20,376
Charagua	3,752	46,423
Choreti	1,548	46,423
Lagunillas	5,326	46,423
Monte Cristo		18,631
Oruro	86,985	32,823
Potosi	55,233	40,541
Puerto Heath	800	5,753
Puerto Alegre		
Puerto Villarroel	1,500	32,045
Sucre	54,270	35,224
San Matias	1,817	4,427
Tupiza	10,206	50,654
Trinidad	14,505	4,610
Tarija	20,851	18,337
Uncia	8,981	70,545
Uyuni	7,783	
Villazon	8,563	17,663
Valle grande	9,474	35,363
Yacuiba	6,658	39,274

Source - Projection of the Population, 1950-1962.

ESTIMATED POPULATION OF DEPARTMENTS AND CAPITAL CITIES - 1962

Ranked by Department Population

Rank		Total Dept. Size	Department Population	Capital City	Surface KM^2	Population
1.	Department of La Paz	133,985 Km^2	1,157,400 Pop.	La Paz	51	352,912
2.	Department of Potosi	118,218 Km^2	619,600 Pop.	Potosi	7	55,233
3.	Department of Cochabamba	55,631 Km^2	550,300 Pop.	Cochabamba	43	92,008
4.	Department of Santa Cruz	370,621 Km^2	326,900 Pop.	Santa Cruz	20	72,708
5.	Department of Chuquisaca	51,524 Km^2	307,600 Pop.	Sucre	8	54,270
6.	Department of Oruro	55,631 Km^2	265,400 Pop.	Oruro	22	86,985
7.	Department of Beni	213,564 Km^2	161,800 Pop.	Trinidad	3.8	14,505
8.	Department of Tarija	37,623 Km^2	142,600 Pop.	Tarija	3.3	20,851
9.	Department of Pando	63,827 Km^2	24,400 Pop.	Cobija	1	2,537

Source: Ministerio de Hacienda y Estadistica
Division Policia 1962.

EXHIBIT C-2

BOLIVIA: POPULATION INDEX BY DEPARTMENTS - 1950-1962

Departments	Area Km^2	Population Index by Km^2	
		1952	1962
Totals:	1,098,581	2.83	3.24
Chuquisaca	51,524	5.58	5.97
La Paz	133,985	7.32	8.64
Cochabamba	55,631	8.99	9.89
Oruro	53,588	4.08	4.95
Potosi	118,218	4.63	5.24
Tarija	37,623	3.44	3.79
Santa Cruz	370,621	0.79	0.88
Beni	213,564	0.59	0.76
Pando	63,827	0.32	0.38

Source: Min. de Hacienda y Estadistica.

EXHIBIT G-4

POPULATION GROWTH BY DEPARTMENT

1952 - 1962

Rank	Department	1952	1962	Increase	% Growth
1.	Beni	126,000	161,800	35,800	28.4
2.	Oruro	218,800	265,400	46,600	21.2
3.	Pando	20,500	24,400	3,900	19.0
4.	La Paz	981,400	1,157,400	176,000	17.9
5.	Potosi	547,600	619,600	72,000	13.1
6.	Santa Cruz	291,200	326,900	35,700	12.2
7.	Tarija	129,400	142,600	13,200	10.2
8.	Cochabamba	500,400	550,300	49,900	9.9
9.	Chuquisaca	288,700	307,600	18,900	6.5

Source:

EXHIBIT G-5

RESUME OF ANALYSIS OF PRESENT SEGMENTS

NOVEMBER, 1964

DC-6B

Segments	No. of Flights	Revenue Passengers	Average Passengers on Board	Cargo Ton Miles on Board	No. of Passengers to Breakeven 1/
Trinidad-Cochabamba	13	334	25.7	4,845	33
Trinidad-Santa Cruz	1	41	41	171	46
Trinidad-La Paz	6	161	27	1,960	39
La Paz-Cochabamba	55	1,839	33	7,099	49
La Paz-Trinidad	7	176	25	1,657	44
La Paz-Arica	4	119	30	135	27
La Paz-Lima	8	181	23	563	56
Cochabamba-La Paz	56	2,195	39	1,868	51
Cochabamba-Santa Cruz	35	1,133	32	1,136	55
Cochabamba-Trinidad	13	390	30	3,851	37
Cochabamba-Tarija	2	41	22	325	49
Santa Cruz-Cochabamba	33	1,183	36	1,361	54
Santa Cruz-Tarija	1	30	30	96	54
Santa Cruz-B.Aires	5	197	39	161	56
Santa Cruz-Sao Paulo	4	119	30	138	56
Tarija-Yacuiba	3	95	32	67	52
Yacuiba-Cochabamba	3	76	25	196	54
Lima-La Paz	7	98	14	7,945	34
B.Aires-Santa Cruz	4	165	41	4,282	44
Sao Paulo-Santa Cruz	4	97	24	3,900	45
Arica-La Paz	4	88	22	701	44

1/ After Cargo Revenues Added.

Note: All figures rounded.

* Diverted trip not scheduled.

Source: Analysis of Flights as Operated by Segment.

EXHIBIT G-6

RESUME OF ANALYSIS OF FLIGHTS AS OPERATED

NOVEMBER, 1964

DC-3

Segment	No. of Flights	Revenue Passengers	Average Pgrs. on Board	Cargo Ton Miles on Board	Number of Passengers to Breakeven [1]
Santa Cruz-Todos Santos	6	34	11	413	10
Santa Cruz-Trinidad	9	139	15	1,407	13
Santa Cruz-Sucre	15	186	12	143	23
Santa Cruz-Camiri	17	299	18	642	21
Santa Cruz-Tarija	4	54	14	178	22
Santa Cruz-Concepcion	10	151	15	1,372	11
Santa Cruz-San Javier	5	85	17	490	12
Santa Cruz-Robore	7	110	16	211	22
Santa Cruz-Corumba	3	9	3	31	23
Santa Cruz-Ascension	6	105	18	963	8
Santa Cruz-San Ignacio	3	38	13	958	0
Todos Santos-Trinidad	3	44	15	4	24
Todos Santos-Sta.Cruz	2	26	13	0	24
Trinidad-San Borja	12	225	19	72	20
Trinidad-Guayaramerin	2	29	15	0	24
Trinidad-Santa Cruz	13	213	16	952	18
Trinidad-Todos Santos	2	24	12	81	20
Trinidad-San Igancio M.	9	58	6	58	22
Trinidad-Magdalena	12	185	15	325	19
San Borja-Guayaramerin	12	185	15	229	22
San Borja-Trinidad	12	223	19	115	23
Guayaramerin-Riberalta	28	363	13	1,061	14
Guayaramerin-San Borja	11	156	14	823	19
Guayaramerin-San Ramon	1	20	20	81	17
Riberalta-Guayaramerin	21	340	16	254	21
Riberalta-Cobija	5	46	9	301	19
Riberalta-Puerto Rico	2	11	6	37	21
San Ignacio-Trinidad	9	92	10	490	10
San Joaquin-Magdalena	9	140	16	58	22
San Joaquin-Guayaramerin	10	117	12	573	20
San Joaquin-San Ramon	3	51	17	4	23
Puerto Rico-Cobija	2	17	9	4	23
Puerto Rice-Riberalta	5	58	12	218	15
Cobija-Puerto Rico	5	43	9	135	20
Cobija-Riberalta	2	16	8	60	21
San Ramon-Magdalena	3	50	17	5	24
San Ramon-San Borja	1	21	21	2	19

[1] After cargo revenue added

Note: All data rounded.

EXHIBIT G-7

RESUME OF ANALYSIS OF FLIGHTS AS OPERATED

NOVEMBER, 1964

DC-3

egment	No. of Flights	Revenue Passengers	Average Passengers on Board	CargoTon Miles on Board	Number of Passengers to Breakeven[1]
ucre-Santa Cruz	15	191	13	432	21
amiri-Villamontes	4	54	14	14	23
amiri-Santa Cruz	16	325	20	569	21
amiri-Yacuiba	4	48	12	33	24
illamontes-Yacuiba	4	49	12	0	24
illamontes-Camiri	4	54	14	16	23
acuiba-Tarija	12	165	14	104	22
acuiba-Vaillamcntes	4	43	11	70	19
acuiba-Salta	4	37	9	1	24
acuiba-Camiri	4	35	9	135	20
arija-Yacuiba	12	129	11	62	23
arija-Santa Cruz	4	63	16	43	23
oncepcion-San Ignacio	8	110	14	63	22
oncepcion-Santa Cruz	7	99	14	203	22
an Ignacio-San Jose	4	68	17	11	23
an Ignacio-Concepcion	7	102	15	73	22
an Ignacio-Santa Cruz	5	62	12	37	23
an Jose-Robore	4	58	15	5	24
an Jose-San Ignacio	4	67	17	33	23
obore-Puerto Suarez	8	118	15	30	24
obore-Santa Cruz	3	61	20	89	22
obore-San Jose	4	71	18	27	23
uerto Suarez-Robore	7	56	8	254	21
uerto Suarez-Santa Cruz	5	61	12	200	22
an Javier-Santa Cruz	6	83	14	861	8
an Javier-Ascension	2	24	12	62	15
an Javier-San Ignacio					
orumba-Santa Cruz	3	18	6	1,146	9
agdalena-San Ramon	5	87	17	21	22
agdalena-San Joaquin	5	69	14	115	19
agdalena-Trinidad	13	229	18	512	20
scension-Santa Cruz	5	47	9	185	20
scencion-San Javier	3	53	18	50	20
alta-Yacuiba	4	24	6	77	23

[1]/After cargo revenue added.

Note: All data rounded.

ANALYSIS OF FLIGHTS AS OPERATED
November 1964

DC-3 Flights

1 Flight	2 Segment	3 Miles	4 No. Flights	5 Rev. Psgs.	6 Average Psg/Flt	7 Orig. Cargo Ton Miles	8 Ave. Cargo Ton Miles	9 Comp. Psg. Rev.	10 Comp. Cargo Rev.	11 Total Rev.	12 Dir. Cost	13 Ind. Cost	14 Total Cost	15 No. Psg. B.E.	16 T/Miles Cargo
								$	$	$	$	$	$		
331	SRZ-TDS	145	3	34	11.33	413	137.67	82.14	96.37	178.51	110.35	61.92	172.27	10.47	128.76
	TDS-TDD	144	3	44	14.67	4	1.33	105.62	.93	106.55	109.58	61.49	171.07	2.63	93.50
	SRZ-TDD	236	2	28	14.00	624	312.00	165.20	218.40	383.60	179.60	100.77	280.37	5.25	164.52
	TDD-SBL	84	4	83	22.00	17	4.25	92.40	2.97	95.37	63.92	35.87	99.79	23.05	10.56
	SBL-GYA	201	4	84	21.00	42	10.50	211.05	7.35	218.40	152.96	85.83	238.79	23.03	39.63
	TDD-GYA	270	1	16	16.00	-	-	216.00	-	216.00	205.47	115.29	320.76	23.76	149.65
	GYA-RIB	50	5	97	19.40	166	33.20	4.50	23.24	71.74	38.05	21.35	59.40	14.46	15.57
							498.95	921.36	349.26	1,220.72					
332	RIB-GYA	50	4	77	16.25	103	25.75	40.62	18.02	58.64	38.05	21.35	59.40	16.55	26.83
	GYA-SBL	201	4	58	14.50	378	94.50	145.72	66.15	211.87	152.96	85.83	238.79	17.18	132.96
	SBL-TDD	84	4	71	17.75	47	11.75	74.55	8.22	82.77	63.92	35.87	99.79	21.80	36.06
	TDD-SRZ	236	3	57	19.00	192	64.00	224.20	44.80	269.00	179.60	100.77	280.37	19.96	80.00
							196.00	485.09	137.19	622.28					
333	SRZ-TDD	236	3	36	12.00	428	142.67	141.60	99.87	241.47	179.60	100.77	280.37	15.30	198.24
	TDD-SBL	84	3	57	19.00	30	10.00	79.80	70.00	149.80	63.92	35.87	99.79	7.09	28.56
	SBL-GYA	201	3	36	12.00	70	23.33	120.60	16.33	136.93	152.96	85.83	238.79	22.14	168.84
	GYA-RIB	50	3	42	14.00	168	56.00	35.00	39.20	74.20	38.05	21.75	59.40	8.08	34.86
							232.00	377.00	225.40	602.40					

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
773	CBB-TJA	301	2	41	21.5	325	162.50	323.57	113.75	437.32	536.38	310.93	847.31	48.74	748.20
	TJA-YAC	72	3	95	31.67	67	22.33	114.01	15.63	129.64	128.30	74.30	202.68	51.96	126.67
	YAC-CBB	35	3	76	25.33	196	65.33	444.54	45.73	490.27	625.48	362.58	988.06	53.69	776.45
	SRZ-TJA	277	1	30	30.00	96	96.00	415.50	67.20	482.70	493.61	286.14	779.75	51.43	520.35
							346.16	1,297.62	242.31	1,539.93					
851	LPB-CBB	160	5	98	19.60	201	40.20	156.80	28.14	184.94	285.12	165.28	450.40	53.80	419.42
	CBB-SRZ	199	5	157	31.40	50	10.00	312.43	7.00	319.43	354.62	205.57	560.19	55.60	353.94
	SRZ-BUE	1246	5	197	39.40	161	32.20	2,454.62	22.54	2,477.16	2,220.37	1,287.12	3,507.49	55.94	1,504.10
							82.40	2,923.85	57.68	2,981.53	2,860.11	1,657.97	4,518.08	56.30	2,277.46
852	BUE-SRZ	1246	4	165	41.25	4,282	1,070.50	2,569.87	749.35	3,319.22	2,220.37	1,287.12	3,507.49	44.27	1,339.45
	SRZ-CBB	199	4	191	47.75	86	21.50	475.11	15.05	490.16	354.62	20.57	560.19	54.79	121.54
	CBB-LPB	160	3	121	40.33	517	172.33	322.64	120.63	443.27	285.12	165.28	450.40	41.22	182.51
	LPB-LIM	737	4	88	22.00	142	35.50	810.70	24.85	835.55	1,333.34	761.32	2,094.66	56.17	1,834.20
							1,299.83	4,178.82	909.88	5,088.20	4,173.44	2,419.29	6,592.73	48.53	3,467.70
853	LIM-LPB	737	3	47	15.67	4,840	1,613.33	577.44	1,129.33	1,706.77	1,333.34	761.32	2,094.66	26.20	2,167.40
	LPB-CBB	160	3	154	51.33	78	26.00	410.64	18.20	428.84	285.12	165.28	450.40	54.03	56.80
	CBB-SRZ	199	4	112	28.00	10	2.50	278.60	1.75	280.35	354.62	205.57	560.19	56.12	402.27
	SRZ-SAO	1170	4	119	29.75	138	34.50	1,740.37	24.15	1,764.52	2,084.94	1,208.61	3,293.55	55.89	2,218.80
							1,676.33	3,007.05	1,173.43	4,180.48	4,038.01	2,340.78	6,378.79	45.94	4,845.27
854	SAO-SRZ	1170	4	97	24.25	3,900	975.00	1,418.62	682.50	2,101.12	2,084.94	1,208.61	3,293.55	44.63	2,678.40
	SRZ-CBB	199	4	178	44.50	75	18.75	442.77	13.12	455.89	354.62	205.57	560.19	54.98	167.74
	CBB-LPB	160	5	215	43.00	63	12.60	344.00	8.82	352.82	285.12	165.28	450.40	55.20	152.00
	LPB-LIM	737	4	98	24.50	421	105.25	902.82	73.67	976.49	1,333.34	761.32	2,094.66	54.84	1,702.60
							1,111.60	3,108.21	778.11	3,886.32	4,038.01	2,340.78	6,378.79	49.49	4,700.74
855	LIM-LPB	737	4	51	12.75	3,105	776.25	469.84	543.37	1,013.21	1,333.34	761.32	2,094.66	42.10	2,321.10
	LPB-ARI	196	4	119	29.75	135	33.75	291.55	23.62	315.17	349.27	202.47	551.74	53.89	371.70
	ARI-LPB	196	4	88	22.00	701	175.25	215.60	122.67	338.27	349.27	202.47	551.74	43.78	480.20
							985.25	976.99	689.66	1,666.65	2,011.88	1,166.26	3,178.14		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
901	CBB-LPB	160	24	914	38.08	328	13.67	304.64	9.57	314.21	285.12	165.28	450.40	55.10	208.22
902	LPB-CBB	160	28	1,050	37.50	4,875	174.10	300.00	121.87	421.87	285.12	165.28	450.40	41.07	214.85
	CBB-SRZ	199	26	864	33.22	1,076	41.38	330.54	28.96	359.50	354.62	205.57	560.19	53.39	328.07
							215.48	630.54	150.83	781.37	639.74	370.85	1,010.59	47.90	542.92
903	SRZ-CBB	199	25	814	32.56	1,200	48.00	323.97	33.60	357.57	354.62	205.57	560.19	52.92	337.45
	CBB-LPB	160	24	945	39.37	960	40.00	314.96	28.00	342.96	285.12	165.28	450.40	52.80	193.48
							88.00	638.93	61.60	700.53	639.74	370.85	1,010.59	52.87	530.93
904	LPB-CBB	160	19	542	28.52	1,945	103.94	228.16	72.75	300.91	285.12	165.28	450.40	47.21	317.48

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
434	TDD-MGD	106	4	72	18.00	177	44.25	95.40	30.97	126.37	80.67	45.26	125.93	17.92	43.61
	MGD-SJB	47	4	50	12.50	65	21.25	29.38	14.87	44.25	35.77	20.07	55.84	17.43	37.80
	SJB-GYA	160	4	36	9.00	252	6.30	72.00	4.41	76.41	121.76	68.32	190.08	23.21	168.68
	GYA-RIB	50	4	52	13.00	139	34.75	32.50	24.32	56.82	38.05	21.35	59.40	14.03	38.43
	RIB-CIJ	180	4	36	9.00	238	59.50	81.00	41.65	122.65	136.98	76.86	213.84	19.13	189.77
	CIJ-PRI	80	4	39	9.75	126	31.50	39.00	22.05	61.05	60.88	34.16	95.04	18.25	80.06
	PRI-RIB	101	4	54	13.50	114	28.50	68.18	19.95	88.13	76.86	43.13	119.99	19.81	74.01
							226.05	417.46	158.22	575.68					
435	RIB-GYA	50	4	60	20.00	46	11.50	50.00	8.05	58.05	38.05	21.35	59.40	20.54	13.4
	GYA-SJB	160	4	63	15.75	435	108.75	126.00	76.12	202.12	121.76	68.32	190.08	14.25	91.54
	SJB-SRM	17	2	35	17.50	4	2.00	14.87	1.40	16.27	12.94	7.26	20.20	22.12	7.61
	SRM-MGD	37	2	34	17.00	5	2.50	31.45	1.75	33.20	28.16	15.80	43.96	22.82	17.87
	SJB-MGD	47	2	44	22.00	1	0.50	51.70	.35	52.05	35.77	20.07	55.84	23.61	5.91
	MGD-TDD	106	4	77	19.25	49	12.25	102.02	8.57	110.59	80.67	45.26	125.93	22.14	34.16
	TDD-SRZ	236	3	60	20.00	280	93.33	236.00	165.20	401.20	179.60	100.77	280.37	9.76	63.39
							230.83	612.04	261.44	873.48					
436	TDD-SRZ	236	1	27	27.00	69	69.00	318.60	48.30	366.90	179.60	100.77	280.37	19.67	-
	SRZ-TDD	236	3	29	9.67	1036	345.33	114.11	241.73	355.84	179.60	100.77	280.37	3.27	237.51
	TDD-MGD	106	4	63	18.75	100	25.00	83.47	17.50	100.97	80.67	45.26	125.93	20.46	60.66
	MGD-SJB	47	1	6	6.00	14	14.00	14.10	9.80	23.90	35.77	20.07	55.84	19.59	59.63
	MGD-SRM	37	3	54	18.00	18	6.00	33.30	4.20	37.50	28.16	15.80	43.96	21.49	15.23
	SRM-SJB	17	3	53	17.67	5	1.67	15.02	1.17	16.19	12.94	7.26	20.20	22.39	7.40
	SJB-GYA	160	4	49	12.25	201	50.25	98.00	35.17	133.17	121.76	68.32	190.08	19.36	131.54
	GYA-RIB	50	4	45	11.25	131	32.75	28.12	22.92	51.04	38.05	21.35	59.40	14.59	44.
							544.00	704.72	380.79	1,085.51					
571	SRZ-SRE	164	5	57	11.40	6	1.20	93.48	.84	94.32	124.80	70.03	194.83	23.66	144.78
	SRE-SRZ	164	5	62	12.40	147	29.40	101.68	20.58	122.26	124.80	70.03	194.83	21.25	133.07
	SRZ-CAM	154	4	78	19.50	42	10.50	150.15	7.35	157.50	117.19	65.76	182.95	22.81	46.86
	CAM-VTS	85	4	54	13.50	14	3.50	57.38	2.45	59.83	64.69	36.30	100.99	23.19	62.30
	VTS-YAC	55	4	49	12.25	-	-	33.69	-	33.69	41.86	23.49	65.35	23.76	45.23
	YAC-TJA	72	4	36	9.00	20	5.00	32.40	3.50	35.90	54.79	30.74	85.53	22.79	75.90
							49.60	468.78	34.72	503.50					

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
572	TJA-TAC	72	4	19	4.75	15	3.75	17.10	2.62	19.72	54.79	30.74	85.53	23.03	97.76
	YAC-VTS	55	4	43	10.75	70	17.50	29.56	12.25	41.81	41.86	23.49	65.35	19.31	51.13
	VTS-CAM	85	4	54	13.50	16	4.00	57.37	2.80	60.17	64.69	36.30	100.99	23.10	62.31
	CAM-SRZ	154	4	92	23.00	78	19.50	177.10	13.65	190.75	117.19	65.76	182.95	21.99	8.36
	SRZ-SRE	164	2	14	7.00	6	3.00	57.40	2.10	59.50	124.80	70.03	194.83	23.50	196.32
	SRE-SRZ	164	2	14	7.00	74	37.00	57.40	25.90	83.30	124.80	70.03	194.83	20.60	196.32
							84.75	395.93	59.32	455.25					
573	SRZ-CAM	154	4	81	20.25	159	39.75	155.92	27.82	183.74	117.19	65.76	182.95	20.15	38.61
	CAM-SRZ	154	4	86	21.50	139	34.75	165.55	24.32	189.87	117.19	65.76	182.95	20.60	24.86
	SRZ-SRE	164	4	47	11.75	73	18.25	96.35	12.77	109.12	124.80	70.03	194.83	22.20	140.69
							92.75	417.82	64.91	482.73					
574	SRE-SRZ	164	4	48	12.00	97	24.25	98.40	16.97	115.37	124.80	70.03	194.83	21.69	137.76
	SRZ-TJA	277	4	54	13.50	178	44.50	186.97	31.15	218.12	210.80	118.28	329.08	21.51	203.01
	TJA-YAC	72	4	68	17.00	10	2.50	61.20	1.75	62.95	54.79	30.74	85.53	23.27	34.76
	YAC-SAL	228	4	37	9.25	1	0.25	105.45	.17	105.62	173.51	97.36	270.87	23.75	236.31
							71.50	452.02	50.04	502.06					
575	SAL-YAC	228	4	24	6.00	77	19.25	68.40	13.47	81.87	173.51	97.36	270.87	22.58	289.24
	YAC-TJA	72	5	85	17.00	44	8.80	61.20	6.16	67.36	54.79	30.74	85.53	22.05	34.76
	TJA-SRZ	277	4	63	15.75	43	10.75	218.14	7.52	225.66	210.80	118.28	329.08	23.22	158.48
	SRZ-CAM	154	5	72	14.40	311	62.20	110.88	43.54	154.42	117.19	65.76	182.95	17.98	102.96
	CAM-SRZ	154	4	73	18.25	179	44.75	140.52	31.32	171.84	117.19	65.76	182.95	19.69	60.61
	CAM-YAC	130	1	11	11.00	1	1.00	71.50	.70	72.20	98.93	55.51	154.44	23.65	118.4
							146.75	670.64	102.71	773.35					
576	SRZ-SRE	164	4	68	17.00	58	14.50	139.40	10.15	149.55	124.80	70.03	194.83	22.52	79.19
	SRE-SRZ	164	4	67	16.75	114	28.50	137.35	19.95	157.30	124.80	70.03	194.83	21.33	82.11
	SRZ-CAM	154	4	68	17.00	130	32.50	130.90	22.75	153.65	117.19	65.76	182.95	20.81	74.36
	CAM-YAC	134	3	37	12.33	32	10.67	82.61	7.47	90.08	101.97	57.22	159.19	22.64	109.40
	YAC-TJA	72	3	44	14.67	40	13.33	52.81	9.33	62.14	54.79	30.74	85.53	21.17	46.74
							99.50	543.07	69.65	612.72					

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
577	TIA- AC	72	4	42	10.50	37	9.25	37.80	6.47	44.27	54.79	30.74	85.53	21.96	68.19
	YAC-CAM	134	4	35	8.75	135	33.75	58.62	23.62	82.24	101.97	57.22	159.19	20.23	143.67
	CAM-SRZ	154	4	74	18.50	173	43.25	142.45	30.27	172.72	117.19	65.76	182.95	19.83	57.86
							86.25	238.37	60.36	298.73					
691	SRZ-CEP	129	5	97	19.40	177	35.40	125.13	24.78	149.91	98.17	55.08	153.25	19.32	40.17
	CEP-SNG	74	4	60	15.00	9	2.25	55.50	1.57	57.07	56.13	31.60	87.91	23.34	46.30
	SNG-SJS	102	4	68	17.00	11	2.75	86.70	1.92	88.62	77.62	43.55	121.17	23.38	49.24
	SJS-RBO	73	4	58	14.50	5	1.25	52.92	.87	53.79	55.55	31.17	86.72	23.52	48.29
	RBO-PSZ	135	4	39	9.75	7	1.75	65.81	1.22	67.03	102.74	57.65	160.39	23.58	135.11
	RBO-SRZ	229	1	21	21.00	37	37.00	240.45	25.90	266.35	174.27	97.78	272.05	21.50	45.14
	PSZ-SRZ	363	3	33	11.00	126	42.00	199.65	29.40	229.05	276.24	155.00	431.24	22.14	330.84
	PSZ-RBO	135	1	4	4.00	28	28.00	27.00	19.60	46.60	102.73	57.65	160.39	20.86	190.55
							150.40	853.16	105.26	958.42					
692	SRZ-SJV	105	3	48	16.00	343	114.33	84.00	80.03	164.03	79.91	44.84	124.75	8.52	58.21
	SJV-ASC	52	2	24	12.00	62	31.00	31.20	21.70	52.90	39.57	22.20	61.77	15.41	43.67
	ASC-SRZ	141	3	44	14.66	110	36.67	103.35	25.67	129.02	107.30	60.21	167.51	20.12	91.66
	SRZ-ASC	141	2	39	19.50	198	99.00	137.47	69.30	206.77	107.30	60.21	167.51	13.93	42.91
	ASC-SJV	52	1	11	11.00	6	6.00	28.60	4.20	32.80	39.57	22.20	61.77	22.14	47.39
	SJV-SRZ	105	2	24	12.00	389	194.50	63.00	136.15	199.15	79.91	44.84	124.75	-	88.21
							481.50	447.62	337.05	784.67					
693	SRZ-RBO	229	3	42	14.00	177	59.00	160.30	41.30	201.60	174.27	97.78	272.05	20.15	159.64
	RBO-SJS	73	3	58	19.33	25	8.33	70.55	5.83	76.38	55.55	31.17	86.72	22.16	23.10
	PSZ-RBO	135	3	18	6.00	136	45.33	40.50	31.73	72.23	102.73	57.65	160.39	19.06	171.27
	SJS-SNG	102	3	53	17.66	31	10.33	90.07	7.23	97.30	77.62	43.55	121.17	22.34	44.43
	SNG-CEP	74	3	45	15.00	53	17.67	55.50	12.37	67.87	56.31	31.60	87.91	20.42	46.30
	CEP-SRZ	129	3	50	18.66	48	16.00	120.36	11.20	131.56	98.17	55.08	153.25	22.02	46.99
							156.66	537.28	109.66	646.94					

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
694	SRZ-CEP	129	4	52	15.50	842	210.50	99.87	147.35	247.32	98.17	55.08	153.25	0.91	7.11
	CEP-SRZ	129	1	11	11.00	1	1.00	70.95	0.70	71.65	98.17	55.08	153.25	23.65	117.57
	CEP-SNG	74	4	50	12.50	54	13.50	46.25	9.45	55.70	56.31	31.60	87.91	21.21	59.51
	SNG-SRZ	176	4	51	12.75	19	4.75	112.20	3.32	115.52	133.94	75.15	209.09	23.38	138.41
	SRZ-PSZ	363	1	3	3.00	16	16.00	54.45	11.20	65.65	276.24	155.00	431.24	23.14	538.27
	PSZ-ROB	135	1	13	13.00	17	17.00	85.75	11.90	99.65	102.73	57.65	160.39	22.00	103.77
	RBO-SJS	73	1	13	13.00	2	2.00	47.45	1.40	48.85	55.55	31.17	86.72	23.38	56.
	SJS-SNG	102	1	14	14.00	2	2.00	71.40	1.40	72.80	77.62	43.55	121.17	23.48	71.10
	SNG-CEP	74	1	15	15.00	1	1.00	55.50	.70	56.20	56.31	31.60	87.91	23.57	46.30
	SRZ-CMG	373	3	9	3.00	31	10.33	55.95	7.23	63.18	283.85	159.27	443.12	23.37	553.10
							278.08	701.87	194.65	896.52					
695	CMG-SRZ	373	3	18	6.00	1146	382.00	111.90	267.40	379.30	283.85	159.27	443.12	9.40	473.17
	SJV-SRZ	105	4	59	14.75	472	118.00	77.44	82.60	160.04	79.91	44.84	124.75	8.03	67.59
	SRZ-ASC	141	4	66	18.50	765	191.25	26.08	133.87	159.95	107.30	60.21	167.51	4.77	202.04
	ASC-SRZ	141	2	8	4.00	75	37.50	28.20	26.25	54.45	107.30	60.21	167.51	20.04	199.01
	ASC-SJV	52	2	42	21.00	44	22.00	54.60	15.40	70.00	39.57	22.20	61.77	17.83	10.24
	SRZ-SJV	105	2	37	18.50	147	73.50	97.12	51.45	148.57	79.91	44.84	124.75	13.96	39.47
							824.25	395.34	576.97	972.31					
696	SRZ-RBO	229	4	68	17.00	41	10.25	194.65	7.17	201.82	174.27	97.78	272.05	23.13	110.57
	PSZ-SRZ	363	2	28	14.00	74	37.00	254.10	25.90	280.00	276.24	155.00	431.24	22.33	253.05
	PSZ-RBO	135	2	21	10.50	73	36.50	70.87	25.55	96.42	102.73	57.65	160.38	19.97	127.00
	RBO-PSZ	135	4	79	19.75	23	5.75	133.31	4.02	137.33	102.73	57.65	160.38	23.16	38.67
	RBO-SRZ	229	2	40	20.00	52	26.00	229.00	18.20	247.20	174.27	97.78	272.05	22.17	61.50
	SRZ-SNG	176	3	38	12.67	958	319.33	111.50	223.53	335.03	133.94	95.15	209.09	-	139.41
	SNG-CEP	74	3	42	14.00	19	6.33	51.80	4.43	56.23	56.31	31.60	87.91	22.56	51.59
	SNG-SRZ	176	1	11	11.00	18	18.00	96.80	12.60	109.40	133.94	75.15	209.09	22.33	160.41
	SRZ-CEP	129	1	2	2.00	353	353.00	12.90	247.10	260.00	98.17	55.08	153.25	-	200.50
	CEP-SRZ	176	3	38	12.66	154	51.33	111.41	35.93	147.34	133.94	75.15	209.09	19.34	139.54
							863.49	1,266.34	604.43	1,870.77					

EXPLANATION OF TERMINOLOGY BY COLUMN

Column N°

1. Flight number as used for flights in the month of November.

2. Flight Segments - these are the segments actually flown in November for each flight. There are some segments which do not correspond to the actual flight schedules due to the need to reroute the flight possibly because of weather.

3. Miles - Distance between the two points of the segment.

4. Number of Flights - This is the number of flights operated during the month over the segment shown.

5. Revenue Passengers - Total number of revenue passengers carried over segment for the month.

6. Average Passenger per Flight - The total number of passengers carried over the segment for the month, divided by the number of flights over the segment.

7. Originating Cargo Ton Miles - This is total Ton Miles of Cargo (freight, Express, Mail, Excess Baggage) originated over the segment for the month.

8. Average Cargo Ton Miles - Total Ton Miles of Cargo for the month over segment, divided by number of flights over segment.

9. Passenger Revenue - Average number of passengers over segment, multiplied by segment miles multiplied by average yield per revenue mile of 5 ¢.

10. Cargo Revenue - Average ton Miles of Cargo carried over segment, multiplied by average total cargo yield per ton mile of 70 ¢.

11. Total Revenues - Passenger and cargo Revenues added together.

12. Direct Cost - The direct cost per mile based on the November figures times the number of miles in segment for Direct Cost over the segment. Direct Cost per Mile by type of aircraft is: DC-6 $1,782. ; DC-3 $.761.

13. Indirect Cost - The indirect cost per mile is based on the November indirect costs prorated to type of aircraft. This cost per mile times miles of segment give the indirect cost for the segment. Indirect Costs per mile by type of aircraft is: DC-6 $1,033. ; DC-3 $.427.

14. Total Cost - Direct and Indirect costs added together.

15. Number of Passengers to Breakeven - This factor is based on no change in the cargo revenue over this segment. The figure shown is the number of passengers needed to breakeven at the present yield of 5 ¢ per revenue passenger mile.

16. Ton Miles of Cargo to Breakeven - This factor is based on no change in the passenger Revenue over this segment. The figure shown is the amount of ton miles of cargo needed to breakeven at the present yield of y0 ¢ per ton mile of cargo.

Source: Company Records.

EXHIBIT G-9

RESUME OF SYSTEM POTENTIAL AND ACTUAL PASSSENGER TRAFFIC

BASED ON TELEPHONE AND TELEGRAPH MESSAGES

Total Messages 6,322

Total Potential Telegraphic Messages x Index 4.67...29,513

Total Actual Annual Passenger Boardings.....31,271

Percentage of error for System[1/]..... 5.6%

Station	No. of Messages	Potential Passengers(4.67)	Actual Passengers
Apolo	24	112	269
Ascencion	48	224	593
Camiri	667	3,114	2,432
Cobija	273	1,274	777
Concepcion	44	205	468
Guayaramerin	381	1,779	3,536
Magdalena	39	182	835
Puerto Suarez	260	1,214	377
Reyes	32	149	241
Riberalta	479	2,236	3,735
Robore	156	728	532
San Borja	128	597	346
San Ignacio Velasco	60	280	538
San Jose	47	219	298
San Joaquin	30	140	906
Santa Ana	131	611	1,414
Sucre	1,126	5,258	2,516
Tarija	941	4,394	2,420
Trigos Santos	25	116	130
Trinidad	582	2,717	6,433
Villamontes	218	1,018	110
Yacuiba	631	2,946	2,365

[1/] Does not include La Paz, Cochabamba or Santa Cruz

Note: Puerto Rico, Rurrenabaque, San Ignacio de Moxos and San Ramon not included account no telephone & telegraphic message data available.

Source: Company Records and Exhibit 37.

COMPARISON OF TRAVEL TIMES BETWEEN MAJOR CITIES IN BOLIVIA

INCLUDING INTERNATIONAL POINTS

Route	Air Enroute Time (Hours)	Bus (Hours)	Train (Time Indicated)
La Paz-Arica	1:00	No Service	12 Hours
La Paz-Lima	3:00	48	No Service
Santa Cruz-Corumba	2:30	No Service	2 Days
Santa Cruz-Buenos Aires	5:00	No Service	No Service
Santa Cruz-Asuncion	2:30	No Service	No Service
Santa Cruz-Sao Paulo	4:40	No Service	4 Days and Nights
La Paz-Cochabamba	0:50	10:30	12 Hours
La Paz-Santa Cruz	1:30	21:30	No Service
La Paz-Potosi	1:50	17:00	2 Days and Nights
La Paz-Rurrenabaque	1:10	No Service	No Service
La Paz-Apolo	1:00	No Service	No Service
La Paz-Santa Ana	2:25	No Service	No Service
La Paz-Trinidad	1:10	No Service	No Service
La Paz-Reyes	1:25	No Service	No Service
La Paz-Oruro	0:50	5:00	6:40 Hours
La Paz-Uncia	1:10	12:00	10:40 Hours
La Paz-Uyuni	1:55	18:00	16:20 Hours
La Paz-Tupiza	2:30	No Service	28:00 Hours
La Paz-Villazon	2:50	50:00	30:20 Hours
La Paz-Puerto Heath	1:50	No Service	30:20 Hours
Cochabamba-Santa Cruz	1:00	11:00	No Service
Cochabamba-Tarija	1:20	32:00	No Service
Cochabamba-Camiri	1:40	32:00	No Service
Cochabamba-Sucre	0:50	8:00	3 Days and Nights
Cochabamba-Trinidad	1:05	No Service	No Service
Cochabamba-Yacuiba	1:30	No Service	No Service
Cochabamba-Todos Santos	1:00		No Service
Sucre-Tarija	1:10	24:00	No Service
Sucre-Camiri	1:00	25:00	No Service
Santa Cruz-San Jose	2:25	No Service	1 Day
Santa Cruz-Robore	1:30	No Service	1½ Days
Santa Cruz-Pto.Suarez	2:30	No Service	2 Days and Nights

Route	Air Enroute Time (Hours)	Bus (Hours)	Train
Cochabamba-Riberàlta	3:00	No Service	No Service
Santa Cruz-Vallegrande	:35	7:00	No Service
Santa Cruz-Lagunillas	:55	12:00	No Service
Santa Cruz-Charagua	1:00	12:00	48:00
Santa Cruz-Bermejo	2:20	4 Days	4½ Days
Santa Cruz-San Matias	2:15	No Service	No Service
Santa Cruz-Choreti	1:00	12:00	No Service
Oruro-Potosi	:57	11:00	16:40 Hours
Oruro-Sucre	1:16	17:00	23:00 Hours
Oruro-Uyuni	1:12	No Service	9:40 Hours
Oruro-Tupiza	1:51	No Service	
Oruro-Villazon	2:10	No Service	23 Hours

LAB'S PASSENGER TRAFFIC

PURPOSE OF THE PASSENGERS TRIP:

Business	51.1%
Recreation	21.6%
Emergency	7.3%
Other	20.0%

THE PASSENGERS' OCCUPATION:

Professional	33.5%
Businessman	21.4%
Housewife	14.0%
Public Employee	7.8%
Student	7.3%
Other	5.0%
Military	4.6%
Farmer	3.4%
Theologan	3.0%

Source: Passenger analysis survey, September, 1964.

EXHIBIT G-13

CITIES IN BOLIVIA CERTIFICATED FOR AIR SERVICE BY CARRIERS OTHER THAN L.A.B.

Cities	Carriers[1]	Air Taxis[2]
★ La Paz	TAM, Abaroa, Condor, Moxos, Boa	
Caranavi	TAM, Abaroa, Condor	
★ Rurrenabaque	TAM, Abaroa, Condor, Moxos, Boa	
★ Reyes	TAM	
Inglaterra	TAM	
★ Puerto Rico	TAM	
★ Riberalta	TAM, Moxos, A.Bolivia, Boa	
★ Guayaramerin	TAM, Aerovias Bolivia	
★ Cochabamba	TAM, Aerovias Bolivia, A.Cochabamba	
★ Santa Cruz	TAM, Condor, A.Cochabamba	Roca
★ Concepcion	TAM	
★ San Ignacio V.	TAM	
★ Robore	TAM	
San Matias	TAM	
Charagua	TAM, Condor	
★ Camiri	TAM	
★ Villamontes	TAM	
★ Tarija	TAM	
Tipuani	TAm, Abaroa, Condor	
Teoponte	Abaroa, Condor	
La Esperanza	Moxos, BOA	
Mapiri	Abaroa	
★ San Borja	Condor, Moxos, BOA	
★ Apolo	Condor, BOA	
Itaguazurenda	Condor	
Mandoyapecha	Condor, A.Cochabamba	
Boyuibe	Condor	
Derrocarna	Condor	
Yapiro	Condor	
Blanca Flor	Moxos	
Nieves	Moxos	
★ Santa Ana	Moxos	
★ Trinidad	Moxos, A.Bolivia, BOA	Pinto, Monasterios
★ San Joaquin	Moxos	
★ S.Ignacio M.	Moxos, A.Bolivia, A.Cochabamba	
Uncia	A.Bolivia, BOA, A. Cochabamba	
Huacareta	Aerovias Bolivia	
El Peru	Aerovias Bolivia	
La Selva	Aerovias Bolivia, A.Cochabamba	
Santa Rosa	BOA	
San Juan	BOA	
★ Cobija	BOA	
San Lorenzo	Aerovias Cochabamba	
Oruro	Aerovias Cochabamba	
Potosi	Aerovias Cochabamba	
★ Todos Santos	Aerovicas Cochabamba	

1/ COMIBOL - No Resolution to authorize Comibol Operation.
C.B.F. - Unscheduled air cargo service between the Dept. of Beni, Pando, La Paz, Cochabamba and Santa Cruz.

2/ Air Taxi Operations: Beni Limitada - Dept. Beni
Cooper - Dept. of Santa Cruz and Tarija
Instituto Lingüistico de Verano-Centers of population North and Northeast Bolivia.

2/ Air Taxis Operations (Continued):

Mision Evangelica Mundial - Service within orbit of missions, Department of Santa Cruz and Beni.

Orientales - Department of Beni and Santa Cruz.

* Served by LAB.

Source: Report of Economical Study Group for Air Transportation in Bolivia, 1963.

EXHIBIT G-14

AIRCRAFT REGISTRATED IN BOLIVIA DURING PERIOD 1946 - 1964 EXCLUDING LAB AIRCRAFT

Year	Total A/C Registered During Year	Multi-Engine Aircraft	Single-Engine Aircraft
1946	1	1	
1951	1	1	
1953	3	1	2
1954	3	1	2
1955	2	0	2
1956	1	0	1
1957	2	0	2
1958	5	1	4
1959	8	4	4
1960	8	2	6
1961	5	2	3
1962	6	1	5
1963	5	3	2
1964	13	6	7
Total	63	23	40
Out of Service 12/31/64	12	3	9
	51	20	31

Note: Of above, 3 multi-engine aircraft are for executive or private use only. Thus, only 17 multi-engine aircraft are actually serviceable.

LAB AIRCRAFT

12/31/64	3 - DC-6B's	
	3 - B-17's	
	6 - DC-3's	
Total	12	

Source: DGAC Records.

EXHIBIT G-15

PASSENGER AND CARGO TRAFFIC - YEAR 1963

Railroad	No. of Passengers	Tons Cargo
Arica-La Paz	86,000	73,000
Villazon-Atocha	131,000	37,000
Potosi-Sucre	69,000	22,000
Cochabamba-Santa Cruz	468,000	9,000
La Paz-Beni	48,000	1,000
La Paz-Antofagasta	554,000	678,000
Machacamarca-Uncia	42,000	64,000
Guaqui-La Paz	8,000	96,000
Total	1,406,000	980,000

Source: Ministry of Economy, La Paz, Bolivia.

EXHIBIT G-17

VALUE OF EXPORTS

(In Millions of Dollars)

	1959	1960	1961	1962	1963
Live Animals	0.1	0.1	0.1	0.1	0.1
Food & Beverages	1.9	2.3	2.4	2.5	1.7
Raw Materials[1/]	75.0	65.2	73.3	73.0	83.9
Manufactures	0.6	0.2	0.3	0.5	0.7
	77.6	67.8	76.1	76.1	86.4

1/ Main ones in 1963 are:

Tin	57.4
Other Minerals	23.1
Petroleum	1.8

Source: Economic and Program Statistics, USAID/Bolivia October, 1964, Table XI.

EXHIBIT G-18

VALUE OF IMPORTS

(In Millions of Dollars)

	1959	1960	1961	1962	1963
Animals, Food & Beverages	16.0	13.9	19.0	25.5 [1]	22.8
Raw Materials	4.9	5.9	5.5	15.1	13.9
Manufactured Goods	21.4	25.1	29.4	33.5	36.1
Manuf. Goods as a % of Total Imports	33 %	35 %	38 %	34 %	35 % [2]
Capital Goods	22.2	26.6	23.8	28.6	31.0
Capital Goods as a % of Total Imports	34 %	37 %	31 %	29 %	30 %
Total	64.5	71.5	77.7	97.7	103.8

[1] Main ones in 1962 are:

Wheat Flour	9.9
Lard	2.2
Milk	1.5

[2] Main ones in 1963 are:

Machinery	10.4
Vehicles & Spare Parts	9.1
Construction Equipment	2.4

Source: Economic and Program Statistics, USAID/Bolivia October, 1964, Table IX.

IMPORTS BY COUNTRY OF ORIGIN

(In Millions of Dollars)

	1952	1959	1960	1961	1962	1963
U.S.A.	37.9	28.8	30.8	32.8	39.0	49.5
Argentine	12.7	8.1	4.2	6.6	7.9	4.2
West Germany	5.1	7.6	9.1	9.5	11.8	13.8
United Kingdom	7.7	3.1	3.6	3.8	5.9	5.7
All others	22.7	12.7	21.1	23.8	31.4	28.9 1/
Total	92.6	64.5	71.5	77.7	97.7	103.8
			10.8%	8.6%	25.7%	6.2%

From 1960 to 1963-45.1%

1/ Main ones in 1963 are:

Japan	7.4
Netherlands	2.4
Belgium	2.6

EXHIBIT C-19

EXHIBIT G-20

FORECAST OF MINERAL EXPORTATIONS

1966 - 1971

(In metric tons)

Mineral	Average 1959-61	1966	1971	% Growth
Tin	21,429	33,560	39,000	82%
Lead	21,253	35,200	41,500	95%
Silver	164	199	229	40%
Antimony	5,856	22,315	27,600	371%
Zinc	4,250	5,800	5,690	34%
Wolfram	1,478	1,730	1,909	35%
Copper	2,195	2,180	2,507	14%
Bismuth	205	455	500	144%

Source: Planeamiento, September, 1963.

EXHIBIT G-21

MINING AND PETROLEUM PRODUCTION

(In Thousands of Units)

Minerals (Tons)	1961	1962
Tin	23.7	24.4
Lead	18.6	19.2
Zinc	3.6	4.3
Copper	2.4	3.0
Others	12.2	23.9
Total	60.5	74.8
Increase	23.6%	

Source: Economic and Program Statistics
USAID/Bolivia, October, 1964,
No. 6, Table VIB.

EXHIBIT G-22

AGRICULTURE - PRODUCTION

(In Thousands of Metric Tons)

	1962	1963
Hulled Rice	28.5	29.7
Sugar Cane	491.3	680.0
Potatoes	540.0	535.0
Cron	319.2	237.6
Wheat	71.6	94.8
Cotton(fiber)	1.2	1.7
Refined Sugar		
Guabira	19.8	25.8
La Belgica	21.0	28.2
La Esperanza	3.4	4.5
San Aurelio	5.1	10.1
Total	1,501.1	1,737.4
%	15.7%	236.3%

Source: Table VI-A Economic Program
Statistics, October 1964, No.6.

EXHIBIT G-23

INDUSTRY - PRODUCTION

(In Thousands of $b. and 1950 Constant Prices)

	1961	1962
Food & Beverages	1,467.8	1,548.6
Textiles	830.2	876.5
Leather & Footwear	375.4	424.0
Tobacco	241.6	256.7
Chemicals	153.6	155.6
Electricity	250.5	268.0
Others	482.2	596.1
Totals	3,801.3	4,101.1
		9.47%
Index	102	111.6

Source: Table VI-C Economic & Program Statistics
October, 1964, No.6.

NUMBER OF INDUSTRIES IN BOLIVIA

Industrial Activity	to 1958	1959	1960	1961	1962	1963	1964 [1]	Diff. Over 1958	% Growth
Food	141	147	149	153	159	167	170	29	20.5%
Beverages	130	133	134	136	137	139	140	10	7.6%
Textiles	233	239	244	251	253	261	261	28	12.0%
Leather & Shoes	104	105	105	107	110	111	113	9	8.6%
Chemicals	118	119	120	126	127	128	128	10	8.4%
Plastics	27	27	28	29	30	30	31	4	14.8%
Mechanical & Elec.	84	86	86	88	89	90	93	9	10.7%
Tobacco	8	8	8	8	8	8	8	0	--
Lumber & Furnitures	146	148	149	157	159	160	163	17	11.6%
Construction Materials	63	64	64	64	65	67	67	4	6.3%
Paper & Press	65	66	67	69	70	72	76	11	16.9%
Rubber & Manuf.	9	10	10	10	10	10	10	1	11.1%
Electricity	4	4	4	4	4	4	4	0	--
Others	153	162	165	172	178	185	186	33	21.5%
Totals	1,285	1,318	1,333	1,374	1,399	1,432	1,450	165	12.8%
Index	100	103	104	107	109	111	113	13	13.0%

[1] Only through May 30, 1964.

Source: Industria XXXIII Memoria de la Cámara Nacional de Industrias - July, 1964, Table 25.

EXHIBIT G-24

ESTIMATES OF THE VALUE INCREASED BY THE MANUFACTURING INDUSTRIES OF BOLIVIA

(In Thousands of Dollars)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	INCREASE
Food	1,129.2	1,724.1	2,012.4	1,341.3	1,887.1	2,048.5	3,360.6	2,763.2	4,343.1	2,764.6	2,446.5	3,888.6	
Drinks	2,875.7	3,145.8	3,165.8	2,292.4	2,880.0	2,847.9	3,410.8	4,626.5	4,451.0	4,418.6	5,304.6	5,041.9	
Textiles	5,886.0	5,614.9	5,288.8	4,480.5	4,585.0	7,094.2	8,274.5	5,606.5	4,026.9	4,518.2	5,582.0	5,841.5	
Leather	1,138.9	1,139.9	1,439.2	916.5	1,209.7	2,134.1	2,842.1	2,101.7	2,083.8	1,815.1	2,074.0	2,682.3	
Chemicals	574.8	733.6	641.2	476.5	588.1	1,324.8	1,156.4	768.1	900.4	863.1	1,082.6	1,004.6	
Mechanical & Electrical	237.6	388.4	408.1	188.3	212.6	802.3	726.6	668.3	568.3	1,427.7	1,768.7	895.4	
Tobacco & derivatives	613.3	796.3	1,025.0	973.4	887.8	921.3	1,113.7	1,671.6	1,576.4	1,615.7	1,917.2	2,298.3	
Lumber & Furnitures	248.4	242.5	354.4	188.1	189.5	317.5	432.5	57.9	402.3	392.2	469.6	516.1	
Construction Materials	1,087.3	1,301.7	1,273.0	1,014.0	974.1	1,044.7	1,705.7	1,476.8	485.7	705.2	1,002.8	999.0	
Paper & Printing	441.8	549.3	551.2	411.6	465.1	378.5	622.2	567.5	440.2	564.2	818.1	992.8	
Rubber & its derivatives	122.8	91.2	94.4	74.2	67.5	146.0	398.9	334.3	28.3	88.0	282.2	79.3	
Electricity	1,892.8	2,204.8	1,908.5	1,318.2	1,104.1	1,005.3	1,155.6	3,264.8	1,809.9	2,251.2	3,541.6	2,988.9	
Others	145.9	93.5	164.4	90.3	159.6	178.7	131.1	106.4	61.6	83.6	122.0	166.3	
Totals	16,395.1	18,125.0	18,225.4	13,754.3	15,110.2	20,243.8	25,330.7	24,513.6	21,177.9	21,507.4	26,411.9	27,395.0	67%

Source: National Chamber of Industry.

EXHIBIT 025

EXHIBIT G-26

PROJECTED CONSUMPTION 1958 - 1971

(Millions of B's)

Rank		1958	1966	Growth Over '58	1971	Growth Over '66
1.	Manufacturer	503,550	780,900	55.0%	1,144,615	46.5%
2.	Petroleum	15,733	23,600	50.0	33,133	40.3
3.	Food, Mfg.	301,967	444,222	47.1	587,304	32.2
4.	Electricity	8,449	11,800	39.0	15,400	30.5
5.	Transport	333,805	430,295	25.9	538,105	25.0
6.	Food, General	1,093,598	1,487,179	35.9	1,859,794	25.0
7.	Commerce	333,324	442,104	32.6	547,659	23.8
8.	Other Services	255,274	329,200	28.9	399,234	21.2
	Total	2,846,064	3,950,000	38.7%	5,125,244	29.7%
	Total p.Capita	780	888	13.8	1,012	13.9

Source: Planeamiento, No.3, 4, 5, September, 1961.

EXHIBIT G-27

COMPOSITION OF GROSS NATIONAL PRODUCT

In Thousands of Dollars - 4 Years

Rank	Area	1958	1962	Increase	% Growth
1.	Agriculture	121.5	136.4	14.9	12.2
2.	Manufacturing	39.5	48.1	8.6	21.8
3.	Commercial	45.3	45.6	.3	.6
4.	Transport	30.0	37.0	7.0	23.3
5.	Mining	32.7	35.5	2.8	8.5
6.	Government	27.1	34.5	7.4	27.3
7.	Petroleum	14.2	14.2	--	0.0
8.	Construction	4.1	2.2	(1.9)	--
9.	Others	36.8	43.5	6.7	18.2

Average Annual Growth for 5 Year Period 3.64%

Source: Planeamiento, September, 1963.

EXHIBIT G-28

TOTAL CONSUMPTION EXPENDITURES, 1958-63

(Millions of dollars constant prices 1961)

1958	332.2
1959	N/A
1960	364.45
1961	402.68
1962	425.08 (Estimated)
1963	444.05 (Projected)

Source: USAID, IMF Publications.

EXHIBIT G29

SHOWING GROWTH IN VARIOUS CATEGORIES

YEARS 1960-1964

Rank	Category	4 Year % Growth (Decrease)
1.	Consumption	21.8%
2.	Production	15.11
3.	Gross National Product 1/	14.8
4.	Population	10.5
5.	Vehicle Registration	4.4
	Lloyd Aereo Boliviano	
	Passenger Kilometers	(6.4%)
	Cargo Ton Kilometers	(16.3%)

1/ Years 1960-1963.

EXHIBIT G-30

CARGO R.R. TRAFFIC IN BOLIVIA

TONS TRANSPORTED

R.R. Line	1962	1963	% Increase (Decrease)
Antofagasta-Bolivia	655,797	671,651	2.4%
Guaqui-La Paz	120,292	95,476	(20.6)
Machacamarca-Uncia	76,030	63,858	(16.0)
Arica-La Paz	69,359	70,767	2.0
Villazon-Atocha	46,069	34,447	(25.2)
Potosi-Sucre	24,448	21,722	(11.2)
Cochabamba-Santa Cruz	7,734	9,430	21.9
La Paz-Beni	612	282	(53.9)
Yacuiba-Santa Cruz	58,832	53,529	(9.0)
Corumba-Santa Cruz	---	---	--
Total	1,059,173	1,021,162	(3.6)

Source: Estadisticas de los Ferrocarriles de Bolivia, Año 1963, Pg. 82.

EXHIBIT G-31

BUS TRAFFIC IN BOLIVIA - 1962 - 1964

Sector	1962 Passengers	1964 Passengers
La Paz-Oruro	12,400	34,719
La Paz-Cochabamba	6,900	19,361
Cochabamba-Santa Cruz	5,399	7,654
La Paz-Caranavi	1,899	N.A.
Cochabamba-Sucre	1,800	5,810
Oruro-Potosi	1,620	4,056 1/
Tarija-Bermejo	1,000	N.A.
Cochabamba-Vallegrande	900	N.A.
Cochabamba-Oruro	902	24,232 1/
Tarija-Villazon	484	N.A.
Tarija-Potosi	389	N.A.
Total	33,693	

1/ Estimated

Source: Report of Economic Study Group for Air Transportation in Bolivia - 1963 and Bus Company Records.

STUDY SHOWING ESTIMATED PASSENGER TRAFFIC AT LAB DOMESTIC CITIES AND IA B PENETRATION

Total Population Bolivia	3,556,000
Total LAB Cities	30
Total Population of LAB cities	820,314
Per cent of Population Served	23.06%
Estimated Total Passenger Traffic 1/	400,346
Projected 1964 Air Traffic 2/	186,346
Penetration of Available Air Traffic by LAB 2/	70.5%

1/ Includes Surface Transportation

2/ Based on first 6 months actual experience all operators in Bolivia

Source: Min. Economics, DGAC-Bolivia Statistics.

GROSS NATIONAL PRODUCT

(In Millions of Dollars)

Year	Total	Growth
1958	351.2	
1959	361.8	3.0%
1960	369.5	2.1
1961	381.4	3.2
1962	397.0	4.1
1963	424.1	6.8

Source: Economic and Program Statistics
USAID/Bolivia, No. 6.

EXHIBIT G-34

OPERATIONS OF NATIONAL ENTERPRISE AIRCRAFT

Rank	Station	Landings by ForeignAir Lab Fields 1964	YPFB-TAM Comibol CBF	National Enterprises % of Total
1.	Ascencion	45	40	88.8%
2.	Camiri	489	389	79.5
3.	San Ignacio Velasco	327	204	62.3
	Sucre	138	86	62.3
4.	Robore	100	62	62.0
5.	Yacuiba	84	49	58.3
6.	Concepcion	157	69	43,9
7.	Santa Cruz	2,7171	930	42.8
8.	Guayaramerin	206	87	42.2
9.	San Jose	22	9	40.9
10.	Tarija	121	49	40.4
11.	Rurrenabaque	231	80	34.6
12.	Todos Santos	24	8	33.3
13.	Cochabamba	1,975	555	28.1
14.	San Borja	266	73	27.4
15.	Puerto Suarez	125	32	25.6
16.	San Javier	59	15	25.4
17.	Apolo	24	6	25.0
18.	San Ignacio Moxos	215	53	24.6
19.	Oruro	77	16	20.7
20.	Riberalta	785	123	15.6
21.	San Joaquin	131	13	9.9
22.	Santa Ana	396	23	5.8
23.	Cobija	123	7	5.6
24.	Magdalena	359	11	3.0
25.	Trinidad	3,222	75	2.3
	Total	11,900	3,064	25.7%

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

COMPAÑIA BOLIVIANA DE AVIACION "BOA"

CHARTER TARIFFS No.1

(Super-Curtiss C-46)

Route	BOA w/tax	LAB w/tax
La Paz-Apolo-La Paz	$b. 5,100	$b. 6,120
La Paz-Cobija-Santa Rosa-La Paz	13,100	16,065
La Paz-Cobija-La Paz	11,800	15,300
La Paz-Cochabamba-La Paz	5,400	7,140
La Paz-Espiritu-La Paz	7,200	7,600
La Paz-Guayaramerin-La Paz	12,600	17,340
La Paz-Nieves-La Paz	8,000	9,486
La Paz-Peru-La Paz	7,200	9,180
La Paz-Riberalta-Santa Rosa-La Paz	13,000	17,595
La Paz-Riberalta-La Paz	11,800	17,340
La Paz-Rurrenabaque-La Paz	6,000	6,120
La Paz-San Borja-La Paz	6,000	6,120
La Paz-San Ignacio Moxos-La Paz	6,800	8,160
La Paz-San Juan-La Paz	9,000	10,200
La Paz-San Lorenzo-La Paz	6,500	7,140
La Paz-Santa Ana-La Paz	9,000	10,200
La Paz-Santa Rosa-La Paz	6,900	7,140
La Paz-Trinidad-La Paz	8,100	10,200
La Paz-La Esperanza-La Paz	8,000	9,180
La Paz-Blanca Flor-La Paz	11,100	13,260
La Paz-Ixiamas-La Paz	7,100	7,650
Tariff: per hour of flight	2,700	3,000
per minute	45	50

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

COMPAÑIA BOLIVIANA DE AVIACION "BOA"

CHARTER TARIFFS No.2

(B-24's and B-17's)

Route	BOA w/tax	LAB w/tax
La Paz-San Borja-La Paz	$b.6,750	$b. 6,426
La Paz-Trinidad-Oruro-La Paz	12,500	12,750
La Paz-Trinidad-La Paz	9,900	9,690
La Paz-Santa Ana-La Paz	10,400	10,200
La Paz-Nieves-La Paz	9,700	9,496
La Paz-Reyes-La Paz	7,300	7,140
La Paz-San Lorenzo-La Paz	8,400	7,140
La Paz-Santa Rosa-La Paz	8,400	7,140
La Paz-Espiritu-La Paz	8,600	7,650
La Paz-Santa Rosa-Riberalta-Santa Rosa-La Paz	17,000	15,810
La Paz-Santa Rosa-Riberalta-La Paz	16,300	15,300
La Paz-Cobija-Santa Rosa-La Paz	16,400	16,065
La Paz-Apolo-La Paz	7,000	6,120
La Paz-La Esperanza-La Paz	9,500	9,130
Tariff: per hour of flight	2,700	3,000
per minute	45	50

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

SERVICIO AEROLINEAS "ABAROA"

(C-47 Equip.)

Passengers	Abaroa	LAB Tariffs
La Paz-Tipuani	$b.91	
Tipuani-La Paz	91	
La Paz-Teoponte	133	
La Paz-Trinidad	140	184
La Paz-San Borja	120	131
La Paz-Riberalta	300	389
Cargo	(Kilo)	
Tipuani-La Paz	0.87	
La Paz-Teoponte	0.91	
La Paz-Tipuani	0.50	
La Paz-Trinidad	1.40	1.10
La Paz-San Borja	1.20	0.90
La Paz-Riberalta	3.00	2.10
Charter (Fixed tariffs)		
La Paz-Tipuani-La Paz	2,000	
La Paz-Teoponte-La Paz	2,100	
La Paz-Mapiri-La Paz	2,100	
Tariff: per hour	1,560	1,500
per minute	26	25

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

COMPAÑIA BOLIVIANA DE RUTAS AEREAS "COBRA"

(B-17's)

Passenger	COBRA	LAB
La Paz-Santa Ana	$b. 200	$b. 249
La Paz-San Borja	130	131
La Paz-Reyes	150	131
La Paz-Rurrenabaque	150	131
La Paz-Cobija	350	505
Cargo	(p.kilo)	
La Paz-Santa Ana	0.80	1.40
La Paz-San Borja	0.40	0.90
La Paz-Reyes	0.60	0.90
La Paz-Rurrenabaque	0.50	0.90
La Paz-Cobija	2.00	2.90
Charter		
Tariff per hour	3,200	3,000
per minute	53.30	50

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

TRUNKAL ROUTE (eff. 4.4.64)

TRANSPORTES AEREOS MILITARES "TAM"

Passenger

		SLCB	SLSU	SLVG	SLCZ	SLCG	SLCA
La Paz to:	$b.	95	170	170	175	235	245
Cochabamba to:			70	70	70	115	125
Sucre to:				60	90	90	100
Vallegrande to					35	70	90
Santa Cruz to:						50	75
Charagua							30

Express and Excess Baggage (p.kilo)

		SLCB	SLSU	SLVG	SLCZ	SLCG	SLCA
La Paz to:	$b.	0.95	1.70	1.70	1.75	2.35	2.45
Cochabamba to:			0.70	0.70	0.70	1.15	1.25
Sucre to:				0.60	0.90	0.90	1.00
Vallegrande to:					0.35	0.70	0.90
Santa Cruz to:						0.50	0.75
Charagua to							0.30

Note: Passenger tariffs have a charge of $b.5 for the ticket and a $b.3 charge for flight insurance.

Charter	TAM	LAB
per hour (C-47)	$b.1,250	$b.1,500
per minute	21	25

ANALYSIS AND STUDY OF THE COMPETITION - TARIFFS

NORTHERN ROUTE

TRANSPORTES AEREOS MILITARES "TAM"

Passenger

		SLSH	SLRQ	SLRY	SLIG	SLRI	SLGY
La Paz to:	$b.	60	100	140	190	300	320
Santa Ana Guachi to:			70	110	160	280	310
Rurrenabaque to:				40	90	260	290
Reyes to:					50	220	250
Inglaterra to:						130	170
Riberalta							40

Express and Excess Baggage (p. kilo)

		SLSH	SLRQ	SLRY	SLIG	SLRI	SLGY
La Paz to	$b.	0.60	1.00	1.40	1.90	3.00	3.20
Santa Ana Guachi to:			0.70	1.10	1.60	2.80	3.10
Rurrenabaque to:				0.40	0.90	2.60	2.90
Reyes to:					0.50	2.20	2.50
Inglaterra to:						1.30	1.70
Riberalta							0.40

Cargo (p. kilo)

		SLSH	SLRQ	SLRY	SLIG	SLRI	SLGY
La Paz to:							
outbound	$b.	0.35	0.80	0.90	1.25	2.10	2.30
inbound		0.35	0.50	0.70	1.10	1.50	1.70
Santa Ana de Guachi to:							
outbound			0.50	0.60	0.75	1.50	1.80
inbound			0.40	0.50	0.65	1.40	1.50
Rurrenabaque to:							
outbound				0.30	0.70	1.40	1.60
inbound				0.30	0.70	1.40	1.50
Reyes to:							
outbound					0.35	0.90	1.40
inbound					0.35	0.90	1.40
Inglaterra to:							
outbound						0.90	1.10
inbound						0.75	0.90
Riberalta							
outbound							0.30
inbound							0.30

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

SOUTHERN ROUTE

TRANSPORTES AEREOS MILITARES "TAM"

Passenger

	SLCB	SLCZ	SLCG	SLCA	SLVM	SLYA	SLTJ
La Paz to: $b.	95	175	235	245	280	300	300
Cochabmaba to		70	115	125	165	170	180
Santa Cruz to:			50	75	130	150	175
Charagua to:				30	70	110	130
Camiri to:					35	90	110
Villamontes to:						30	45
Yacuiba							40

Charter	TAM	LAB
per hour (C-47)	$b.1,250	$b.1,500
per minute	21	25

Parcel Post and Excess Baggage (p.kilo)

	SLCB	SLCZ	SLCG	SLCA	SLVM	SLYA	SLTJ
La Paz to: $b.	0.95	1.75	2.35	2.45	2.80	3.00	3.00
Cochabamba to:		0.70	1.15	1.25	1.65	1.70	1.80
Santa Cruz to:			0.50	0.75	1.30	1.50	1.75
Charagua to:				0.30	0.70	1.10	1.30
Camiri to:					0.35	0.90	1.10
Villamontes to:						0.30	0.45
Yacuiba							0.40

Note: Passenger tariffs carry additional charges of $b.5 for the ticket and $b.3 for flight insurance.

Yacuiba tariff is PROVISIONAL.

STUDY AND ANALYSIS OF THE COMPETITION - TARIFFS

ROUTE TO THE ORIENTE

TRANSPORTES AEREOS MILITARES "TAM"

Passenger

		SLCB	SLCZ	SLCP	SLSI	SLRB	SLMT
La Paz to:	$b.	95	175	260	275	325	400
Cochabamba to:			70	155	170	205	295
Santa Cruz to:				55	85	120	195
Concepcion to:					25	110	120
San Ignacio to:						70	115
Robore							95

Parcel Post and Excess Baggage (p.kilo)

		SLCB	SLCZ	SLCP	SLSI	SLRB	SLMT
La Paz to:	$b.	0.95	1.75	2.60	2.75	3.25	4.00
Cochabamba to:			0.70	1.55	1.70	2.05	2.95
Santa Cruz to:				0.55	0.85	1.20	1.95
Concepcion to:					0.25	1.10	1.20
San Ignacio to:						0.70	1.15
Robore							0.95

Note: $b.0.40 per kilo is charged for the transportation of fresh food (meat, fruit, vegetables,etc.) on segment San Matias-Robore.

Charter		TAM	LAB
	per hour (C-47)	$b.1,250	$b. 1,500
	per minute	21	25

STUDY AND ANALYSIS OF THE COMPETITION - ITINERARIES

First Quarter, 1965:

month	North	South	Oriente	Main
January	12-26	7-21	13-27	2-16-30
February	9-23	4-18	10-24	13-27
March	9-23	4-18	10-24	13-27

I T I N E R A R Y

N O R TH

Leave:		Arrive:	
La Paz	09:00	Santa Ana	09:35
S.Ana	10;10	Rurrenabaque	10:40
Rurrenabaque	11:10	Reyes	11:20
Reyes	12:00	Inglaterra	12:40
Inglaterra	13;10	Riberalta	14:20
Riberalta	15:00	Guayaramerin	15:20
Guayaramerin	16:00	Riberalta	16:20
(Return next day)			
Riberalta	08:00	Inglaterra	09:10
Inglaterra	10:00	Reyes	10:40
Reyes	11:10	Rurrenabaque	11:20
Rurrenabaque	12:00	Sta.Ana	12:30
Sta. Ana	13:00	La Paz	13:40

S O U T H

Leave:		Arrive:	
La Paz	08:00	Cochabba	09:00
Cochabamba	10:00	S.Cruz	11:20
S.Cruz	13:00	Charagua	14:00
Charagua	14:20	Camiri	14:35
Camiri	15:00	Villamon.	15:40
Villamontes	16:20	Yacuiba	16:40
Yacuiba	17:20	Tarija	17:50
(Return next day)			
Tarija	08:00	Yacuiba	08:30
Yacuiba	09:00	Villamon.	09:20
Villamontes	10:00	Camiri	10:40
Camiri	11:10	Charagua	11:25
Charagua	12:00	Sta.Cruz	13:00
Sta. Cruz	14:30	Cochabba	15:30
Cochabamba	16:30	La Paz	17:30

ORIENTE

Leave		Arrive:	
La Paz	08:00	Cochabamba	09:00
Cochabamba	10:00	Sta. Cruz	11:20
Sta. Cruz	13:00	Concepcion	14:00
Concepcion	14:20	S.Ignacio	14:50
S. Ignacio	15:15	Robore	16:20
Robore	17:20	San Matias	18:30
(Return next day)			
San Matias	07:00	Robore	08:10
Robore	09:10	San Ignacio	10:25
San Ignacio	10:45	Concepcion	11:15
Concepcion	11:45	Santa Cruz	12:45
Santa Cruz	14:15	Cochabamba	15:35
Cochabamba	16:30	La Paz	17:30

TRUNKAL

Leave:		Arrive	
La Paz	08:00	Cochabba	09:00
Cochabamba	10:00	Sucre	10:45
Sucre	11:30	Vallegrande	12:00
Vallegrande	12:30	St. Cruz	13:00
(Return next day)			
Santa Cruz	08:00	Vallegrande	08:30
Vallegrande	09:00	Sucre	09:30
Sucre	10:15	Cochabba	11:00
Cochabamba	12:00	La Paz	13:00

Note: Schedules are prepared every three months.

EXHIBIT G-36

GENERAL INDEX

COST OF LIVING IN THE DEPARTMENT CAPITALS

(Base Year 1931 - 100)

Rank	Department Capital	1957	1964[1/]	Rank
1.	Sucre	365,263	126,38	(8)
2.	Potosi	325,397	146.50	(5)
3.	Oruro	302,975	155.13	(4)
4.	Cochabamba	301,591	163.75	(3)
5.	Trinidad	291,455	113.56	(9)
6.	La Paz	276,482	145.80	(6)
7.	Santa Cruz	275,745	202.20	(1)
8.	Tarija	256,574	197.68	(2)
9.	Cobija[2/]	77,063	141.11	(7)

1/ March 1964 only, Base year 1957 - 100

2/ Base Year 1939 - 100

EXHIBIT G-37

30 DAY STUDY OF MESSAGES TRANSMITTED - 1962

Selected Cities

Rank		City	Number
1.		La Paz	6,352
2.		Cochabamba	2,623
3.		Santa Cruz	2,121
4.		Sucre	1,126
5.	*	Potosi	987
6.	*	Oruro	958
7.		Tarija	941
8.		Camiri	667
9.		Yacuiba	631
10.		Trinidad	582
11.		Riberalta	479
12.		Guayaramerin	381
13.	*	Villazon	286
14.		Cobija	273
15.		Puerto Suarez	260
16.		Villamontes	218
17.	*	Vallegrande	211
18.		Robore	156
19.		Santa Ana	131
20.		San Borja	128
21.		Uyuni	127
22.	*	Camargo	97
23.	*	Tupiza	71
24.	*	Bermejo	51

Note: Of top 24 cities in activity only 16 ar eserved by LAB.

RATE OF EXCHANGE

BOLIVIANOS FOR DOLLARS U.S.

		Free Market	
	Year	Buy	Sell
	1955	2,945	3,009
	1956	7,568	7,705
	1957	8,100	8,190
	1958	9,511	9,577
	1959	11,890	11,951
	1960	11,936	12,162
	1961	11,979	12,278
	1962	11,953	12,185
	1963		
1/	1964	11,885	12,050

1/ Estimated

Source: Statistic Bulletin No.87 - 1963

RAIL TRANSPORTATION TARIFFS

TICKETS AND PARCEL POST

	Cochabamba		La Paz		Santa Cruz		Sucre		Potosi		Camiri		Caranavi		Copacabana		Vallegrande		Oruro		Uyuni	
	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo	Tick.	Kilo
Cochabamba			36.	0.40	36.	0.40	36.	0.40	56.	040	99.	1.10	56.	0.60	56.	0.60	36.	0.40	20.	0.20	64.	
La Paz	36.	0.40			72.	0.80	92.	0.80	92.	1.	133.	1.50	20.	0.20	20.	0.20	72.	0.80				
Sta.Cruz	36.	0.40	72.	0.80			72.	0.80	92.	1.			92.	1.	92.	1.	20.	0.20	56.	0.60		
Sucre	36.	0.40	72.	0.80	72.	0.80			20.	0.20	61.	0.70	92.	1.	92.	1.	72.	0.80	56.	0.60		
Potosi	56.	0.60	92.	1.	92.	1.	21.	0.20			81.	0.90	112.	1.20	112.	1.20	92.	1.				
Camiri	97.	1.10	133.	1.50			61.	0.70	81.	0.90			153.	1.70	153.	1.70	133.	1.50	117.	1.50		
Caranavi	56.	0.60	20.	0.20	92.	1.	92.	1.	112.	1.20	153.	1.70			40.	0.50	92.	1.				
Copacabana	56.	0.60	20.	0.20	92.	1.	92.	1.	112.	1.20	153.	1.70	40.	0.50			92.	1.				
Vallegrande	36.	0.40	72.	0.80	20.	0.20	72.	0.80	92.	1.			92.	1.	92.	1.			56.	0.60	96.	
Oruro	20.	0.20			56.	0.60	56.	0.60			117.	1.50					56.	0.60			44.	

Service Tickets - payment of $b.15.

1. Parcel Post and excess of 1 to 10 Kgs. as minimum. From 10 Kgs. on according to tariff for each Kg.
2. Nite trips have 10% charge on the day fare.
3. Tickets and Parcel Post to be paid at destination have a 10% charge.
4. On the value of tickets extended in Sta. Cruz the amount of $b.1 has to be added for the Municipalidad and $b.2 pro-Sports.
5. For bulky parcel and bundles the tariff will be doubled.

EXHIBITH C-39

EXHIBIT DF-1

RESUME OF TOTAL TRAFFIC IN BOLIVIA

1963

	Passengers	% of Total	Tons Cargo	% of Total
Air[1]	186,346	9.59%	316,998	26.0%
Rail	1,406,000		902,127[3]	
Bus[2]	351,057		N/A	
Total	1,943,403		1,219,125	

1/ Includes air taxi operators - origin passengers, 1964 first 6 months x 2.

2/ Estimated inter city traffic only.

3/ After reduction of mineral traffic.

Source: Boletin Estadistica DGAC, Minister of Economy.

RESUME OF ANNUAL TRAFFIC GENERATED BY POPULATION

Population of Bolivia	3,556,000
Passengers per 1,000 Pop.	546.5
Tons of Cargo per 1,000 Pop.	360.9
Air Passengers per Domestic Tlephone-Telegraphic message	8.17
Salaries	

ESTIMATED PASSENGER TRAFFIC GENERATED AT SELECTED CITIES

(PROJECTED FROM POPULATION)

City	Population	Estimated Annual Passengers	Estimated Annual Pgrs. at 9.59% [1]	Actual 1963 Air Passengers	Actual Boardings as % of Traffic
Apolo	7,057	3,856	369	369	9.59%
Tarija	20,851	11,395	1,092	2,420	21.2
Todos Santos	2,398	1,289	123	126	9.78
Sucre	54,270	29,658	2,844	2,516	8.48
Bermejo	2,072	1,132	108		
Culpina	5,369	2,934	281		
Charagua	3,752	2,050	196		
Oruro	86,985	47,488	4,554		
Potosi	55,233	30,184	2,894		
Tupiza	10,206	5,577	534		
Uncia	8,981	4,908	470		
Uyuni	7,783	4,253	407		
Villazon	8,563	4,833	463		
Vallegrande	9,474	5,177	496		

Source: Company records

[1] 546.5 Passengers per 1,000.

EXHIBIT DF-4.

CITIES STUDIED AS POSSIBLE FUTURE LOCAL OR REGIONAL ADDITIONS TO LAB ROUTES

Bermejo	Arequipa, Peru
Charagua	Antofagasta, Chile
Choreti	Asuncion, Paraguay
Culpina	Cuzco, Peru
Lagunillas	Santiago, Chile
Montecristo	Matto Grosso, Brazil
Oruro	Montevideo, Uruguay
Puerto Alegre	Mollendo, Peru
Puerto Heath	
Puerto Villarroel	
Potosi	
San Matias	
Tupiza	
Uncia	
Uyuni	
Vallegrande	
Villazon	

EXHIBIT DF-5

TOTAL REPORTED AIR PASSENGERS YEAR 1963

City	Population	Air Passengers Number 1962	Per Message
La Paz	352,912	34,729	5.46
Cochabamba	92,008	18,062	6.88
Trinidad	14,505	5,149	8.66
Santa Cruz	72,708	7,853	3.70
Camiri	6,918	2,235	4.67
Sucre	54,270	1,464	11.43
Tarija	20,851	2,484	3.02
Apolo	7,057	609	

Note: Passenger Traffic includes non-skeds, air taxi, TAM, etc.

Source: Economic Study Group for Air Transportation in Bolivia.

SELECTED CITIES GROUPED BY POPULATION

Group "A" 0-15,000		Group "B" over 15,000
Charagua	Camiri	Santa Cruz
Choreti	Culpina	Oruro
Puerto Heath	Lagunillas	Potosi
San Matias	Uncia	Tarija
Puerto Villa-rroel	Uyuni	
Bermejo	Villazon	
	Vallegrande	
	Yacuiba	
	Tupiza	
	Trinidad	

Group	Index
"A"	4.67
"B"	3.02

EXHIBIT DF-7

ANALYSIS OF INDEX APPLIED TO SELECTED SEGMENTS

City Pairs	Messages	Est. Pgrs.	1963 Actual
La Paz-Santa Cruz	777	2,346	3,083
Yacuiba-Sucre	60	181	190
Yacuiba-Camiri	26	78	87
Camiri-Sucre	120	362	378
Camiri-Yacuiba	24	72	114
Cochabamba-Tarija	86	401	488
Cochabamba-Todos Santos	19	88	42
Cochabamba-Sucre	198	924	786
Magdalena-Riberalta	3	11	13
	1,313	4,463	5,181

EXHIBIT DF-8

TOTAL REPORTED AIR PASSENGER TRAFFIC YEAR 1962
AND TELEPHONE-TELEGRAPH MESSAGES FOR SELECTED CITIES

City	Population	Number Air Passengers	Number T & T Messages	Index
Santa Cruz	72,708	7,853	2,121	3.70
Tarija	20,851	2,484	820	3.02
Trinidad	14,505	5,149	594	8.66
Camiri	6,918	2,235	478	4.67

Note: Passenger traffic includes non-skeds, and Govt. operators.

Source: Passenger data report of Economic Study Group for Air Transport in Bolivia - Minister of Communications.

PROJECTED PASSENGER TRAFFIC FOR SELECTED CITIES

BASED ON TELEPHONE & TELEGRAPH MESSAGES

City	Estimated Annual Passengers (1962)	Projected Estimated Annual Pgrs. Traffic (1964)
GROUP "A"		
Bermejo	583	710
Charagua	298	363
San Matias	102	124
Tupiza	331	403
Uyuni	593	722
Villazon	1,335	1,626
Vallegrande	985	1,199
GROUP "B"		
Oruro	2,893	3,523
Potosi	2,980	3,629

Note: 1964 Estimated based on 21.8% (1962, 12.7% loss 1964 35.4% Increase)
Messages x Index x estimated increase for 1964 = Estimated Passengers.
Source: Min. Communications-Statistics radiocommunications of the State and Exhibit - Total Reported Passenger Traffic, Year 1963.

EXHIBIT DF- 10

30 DAY STUDY

OF TELEPHONE AND TELEGRAPH MESSAGES TRANSMITTED

VALLEGRANDE, BOLIVIA

Total Messages Transmitted..... 211

Between Vallegrande and:

City	Number	% of Total
La Paz	103	48.8%
Cochabamba	26	12.3
Santa Cruz	25	11.8
Sucre	15	7.1
Tarija	4	1.9
Charagua	3	1.4
Potosi	2	.95
Villamontes	2	.95
Camiri	2	.95
Yacuiba	1	.47
Villazon	1	.47
Trinidad	1	.47
Magdalena	1	.47
Robore	1	.47

EXHIBIT DF-11

30 DAY STUDY

TELEPHONE AND TELEGRAPH MESSAGES TRANSMITTED

VILLAZON, BOLIVIA

Total Transmitted.....286

Between Villazon and:

City	Number	% of Total
La Paz	137	47.9%
Potosi	19	6.6
Oruro	12	4.2
Tarija	5	1.7
Tupiza	3	1.0
Cochabamba	1	.35
Santa Cruz	1	.35
Yacuiba	1	.35
Sucre	1	.35

Source: Min. of Communications

EXHIBIT DF-12

30 DAY STUDY

TELEPHONE & TELEGRAPH MESSAGES TRANSMITTED

UYUNI, BOLIVIA

Total Messages.....127

Between Uyuni and:

City	Number	% of Total
La Paz	69	54.3
Sucre	15	11.8
Oruro	14	11.0
Cochabamba	9	7.1
Tarija	6	4.7
Tupiza	6	4.7
Potosi	4	3.1
Villazon	3	2.4
Santa Cruz	1	.8
Total	127	

Source: Min. of Communications.

EXHIBIT DF-13

30 DAY STUDY

TELEPHONE & TELEGRAPH MESSAGES TRANSMITTED

TUPIZA, BOLIVIA

Total Messages 71

Between Tupiza and:

City	Number	% of Total
Cochabamba	6	8.5%
Santa Cruz	6	8.5
La Paz	5	7.0
Potosi	5	7.0
Sucre	5	7.0
Oruro	3	4.2
Total	30	

Source: Min. of Communications.

ESTIMATED PASSENGER TRAFFIC BETWEEN SELECTED CITIES

From La Paz to:

City	Number T & T Messages	Estimated Annual Air Passengers
Potosi	406	1,226
Oruro	181	546
Villazon	122	368
Vallegrande	82	247
Camargo	38	114
Bermejo	30	91
Uyuni	27	81
Tupiza	4	12
Charagua	4	12
San Matias	1	3

Note: Messages x 3.02 = Estimated Passengers.

ESTIMATED PASSENGER TRAFFIC BETWEEN SELECTED CITIES

From Cochabamba to:

City	No.T & T Messages	Estimated Annual Air Passengers
Oruro	205	619
Potosi	83	250
Villazon	53	160
Vallegrande	41	123
Bermejo	11	33
Tupiza	9	27
Uyuni	5	15
Charagua	3	9
Camargo	2	6

ESTIMATED PASSENGER TRAFFIC BETWEEN SELECTED CITIES

BASED ON TELEPHONE AND TELEGRAPH MESSAGES

From Sucre to:

City	Number T & T Messages	Estimated Annual Air Passengers
La Paz	465	1,404
Cochabamba	146	440
Potosi	116	350
Santa Cruz	99	298
Oruro	75	226
Camiri	46	138
Camargo	18	54
Villazon	12	36
Vallegrande	11	33
Tupiza	9	27

Source: Min. Communications

DISTRIBUTION OF ESTIMATED AIR TRAFFIC

ORURO, BOLIVIA

Total Telephone and Telegraph Messages 958

Estimated Annual Air Traffic..... 3,523

City	Distribution of T&T Messages	Projected Passengers (Annual)
Cochabamba	26.7	940
La Paz	26.0	915
Sucre	14.1	496
Potosi	8.4	295
Santa Cruz	6.1	214
Tarija	5.1	179
Villazon	3.4	119
Uyuni	1.4	49
Yacuiba	1.4	49
Tupiza	1.1	38

Source: Radio Communications of the State.

EXHIBIT DF-18

DISTRIBUTION OF ESTIMATED AIR PASSENGER TRAFFIC

POTOSI, BOLIVIA

Total Telephone and Telegraph Messages.....987
Estimated Annual Air Traffic.....3629

City	Distribution of T & T Messages	Projected Passengers
La Paz	59.8	2,170
Cochabamba	10.6	384
Oruro	9.9	359
Sucre	6.1	221
Tarija	2.7	97
Santa Cruz	2.4	87
Villazon	2.2	79
Camargo	1.3	47
Tupiza	1.3	47
Uyuni	.8	29
Camiri	.8	29

Source: Radio Communications Statistics of the State.

DISTRIBUTION OF ESTIMATED AIR PASSENGER TRAFFIC

UYUNI, BOLIVIA

Total Telephone and Telegraph Messages..... 127
Estimated Annual Air Traffic..... 722

City	Distribution of T & T Messages	Projected Passengers
La Paz	54.3%	392
Sucre	11.8	85
Oruro	11.0	79
Cochabamba	7.1	51
Tarija	4.7	34
Tupiza	4.7	34
Potosi	3.1	22
Villazon	2.4	17
Santa Cruz	.8	5

Source: Radio Communications of the State and Exhibits

EXHIBIT DF-20

DISTRIBUTION OF ESTIMATED AIR PASSENGER TRAFFIC

TUPIZA, BOLIVIA

Total Telephone and Telegraph Messages..... 71
Estimated Annual Air Traffic..... 403

City	Distribution of Messages	Projected Passengers
Cochabamba	8.5%	34
Santa Cruz	8.5	34
La Paz	7.0	28
Potosi	7.0	28
Sucre	7.0	28
Oruro	4.2	16
Tarija	1.4	6
Yacuiba	1.4	6

Source: Radio Communication Statistics

EXHIBIT DF-21

DISTRIBUTION OF ESTIMATED AIR PASSENGER TRAFFIC

VILLAZON, BOLIVIA

Total Telephone and Telegraph Messages..... 286
Estimated Annual Air Traffic.....1,626

City	Distribution of T & T Messages	Projected Passengers
La Paz	47.9%	778
Potosi	6.6	107
Oruro	4.2	68
Tarija	1.7	27
Tupiza	1.0	16
Sucre	.35	6
Cochabamba	.35	6
Santa Cruz	.35	6
Yacuiba	.35	6

Source: Radio Communications Statistics of the State

EXHIBIT DF-22

DISTRIBUTION OF ESTIMATED AIR PASSENGER TRAFFIC

VALLEGRANDE, BOLIVIA

Total Telephone and Telegraph Messages..... 211
Estimated Annual Air Traffic..... 1,199

City	Distribution of T&T Messages	Projected Passengers
La Paz	48.8	585
Cochabamba	12.3	147
Santa Cruz	11.8	141
Sucre	7.1	85
Tarija	1.9	22
Charagua	1.4	16
Potosi	.95	11
Villamontes	.95	11
Camiri	.95	11
Yacuiba	.47	6
Villazon	.47	6
Trinidad	.47	6
Magdalena	.47	6
Robore	.47	6

Source: Radio Communications of the State Statistics

EXHIBIT DF-23

ESTIMATED AIR CARGO TRAFFIC PER AIR PASSENGER

FIRST HALF 1964

Carriers:	Passengers	Cargo[1]
Lloyd Aéreo Boliviano	50,945	3,210,743
Aerolineas Abaroa	5,434	842,046
Bolivia De Aviacion(BOA)	1,889	13,264,373
Aerovias Condor	3,558	686,790
Aereos Cochabamba (SAC)	972	769,296
CBF	771	1,145,638
COBRA		16,115
Aerovias Bolivianas	275	325,448
Boliviana de Rutas Aereas	57	
Beni	1,940	61,060
A. Melgar	356	5,634
Inst.Lingüístico de Verano	864	41,721
Vicariato del Beni	419	11,634
R. Herron	44	1,947
Bartos	98	3,760
Gulf Oil	1,187	25,049
South American Placers	969	519,409
Y.P.F.B.	2,509	406,479
Total	72,287	21,337,142

Note: Total Cargo 21,337,142 ÷ by Total Passengers 72,289 = 295 kilos per passenger (649 pounds PP)- Annual Cargo reduced by 50% for diversion.

[1] Meat flights are only included one way as they carry dry cargo.

Source: Boletin Estadístico No.1 - DGAC, October 1964.

ESTIMATED AIR CARGO TRAFFIC BETWEEN SELECTED CITIES

From La Paz to:	Number of T & T Messages	Estimated Annual Air Passengers	Estimated Annual Air Cargo(pounds)
Potosi	406	1,226	795,674
Oruro	181	546	354,354
Villazon	122	368	238,832
Vallegrande	82	247	160,303
Camargo	38	114	73,986
Bermejo	30	91	59,059
Uyuni	27	81	52,569
Tupiza	4	12	7,738
Charagua	4	12	7,788
San Matias	1	3	1,947

Note: Messages x 3.02 = Estimated Passengers

649 pounds x Estimated Passengers = Estimated Air cargo.

Source: Exhibit D-23

ESTIMATED AIR CARGO TRAFFIC BETWEEN SELECTED CITIES

From Cochabamba to:	Estimated Annual Air Passengers	Estimated Annual Air Cargo (Pounds)
Oruro	619	401,731
Potosi	250	162,250
Villazon	160	103,840
Vallegrande	123	79,827
Bermejo	33	21,417
Tupiza	27	17,523
Uyuni	15	9,735
Charagua	9	5,841
Camargo	6	3,894

Note: 649 pounds x Estimated Air Cargo.

Source: Exhibit D-23

DISTRIBUTION OF ESTIMATED AIR CARGO TRAFFIC

ORURO, BOLIVIA

City	Projected Passengers (Annual)	Projected Air Cargo (Annual) Pounds
Cochabamba	940	610,060
La Paz	915	593,835
Sucre	496	321,904
Potosi	295	191,455
Santa Cruz	214	138,886
Tarija	179	116,171
Villazon	119	77,231
Uyuni	49	31,801
Yacuiba	49	31,801
Tupiza	38	24,662

Estimated Annual Air Cargo Traffic ..... 2,286,427 pounds.

Source: Exhibit D-23

EXHIBIT DF-27

DISTRIBUTION OF ESTIMATED AIR CARGO TRAFFIC

POTOSI, BOLIVIA

City	Projected Passengers (Annual)	Projected Air Cargo (Annual) Pounds
La Paz	2,170	1,408,330
Cochabamba	384	249,216
Oruro	359	232,991
Tarija	97	62,953
Santa Cruz	87	56,463
Villazon	79	51,271
Camargo	42	27,258
Tupiza	42	27,258
Uyuni	29	18,821
Camiri	29	18,821

Estimated Annual Air Cargo..... 2,355,221 Pounds.

Source: Exhibit D-23

DISTRIBUTION OF ESTIMATED AIR CARGO TRAFFIC

UYUNI, BOLIVIA

City	Projected Passengers (Annual)	Projected Air Cargo Annual(Pounds)
La Paz	392	254,408
Sucre	85	55,165
Oruro	79	51,721
Cochabamba	51	33,099
Tarija	34	22,066
Tupiza	34	22,066
Potosi	22	14,278
Villazon	17	11,033
Santa Cruz	5	3,645

Estimated Annual Air Cargo.....468,578 pounds.

Source: Exhibit D-23

DISTRIBUTION OF ESTIMATED AIR CARGO TRAFFIC

TUPIZA, BOLIVIA

City	Projected Passengers (Annual)	Projected Air Cargo (Annual) Pounds
Cochabamba	34	22,066
Santa Cruz	34	22,066
La Paz	28	18,172
Potosi	28	18,172
Sucre	28	18,176
Oruro	16	10,384
Tarija	6	3,894
Yacuiba	6	3,894

Estimated Annual Air Cargo..... 261,547 lbs.

Source: Exhibit D-23

DISTRIBUTION OF ESTIMATED AIR CARGO TRAFFIC

VILLAZON, BOLIVIA

City	Projected Passengers (Annual)	Projected Air Cargo (Annual) lbs.
La Paz	778	504,922
Potosi	107	69,443
Oruro	68	44,132
Tarija	27	17,523
Tupiza	16	10,384
Sucre	6	3,894
Cochabamba	6	3,894
Santa Cruz	6	3,894
Yacuiba	6	3,894

Estimated Annual Air Cargo.....1,055,274

Source: Exhibit D-23

DISTRIBUTION OF ESTIMATED AIR CARGO TRAFFIC

VALLEGRANDE, BOLIVIA

City	Projected Passengers (Annual)	Projected Air Cargo (Annual) lbs.
La Paz	585	379,665
Cochabamba	147	95,403
Santa Cruz	141	91,509
Sucre	85	55,165
Tarija	22	14,278
Charagua	16	10,384
Potosi	11	7,139
Villamontes	11	7,139
Camiri	11	7,139
Yacuiba	6	3,894
Villazon	6	3,894
Trinidad	6	3,894
Magdalena	6	3,894
Robore	6	3,894

Estimated Annual Air Cargo.....778,151.

Source: Exhibit D-23

ANALYSIS OF PROPOSED SEGMENTS ONE WEEKLY FREQUENCY

ANNUAL TRAFFIC AND COSTS

Segment	No. of PGRS.	Tons of CARGO	Segment Distance	Total Operating Cost[1]	Station Cost	Total Cost	Available Seat Miles[2]	Revenue Passenger Miles	Passenger Load Factor[3]
Cochabamba-Oruro	1,071		74	4,079.92			80,808	79,254	98.0
Oruro-Uyuni	989		174	9,529.52			190,008	172,086	90.5
Uyuni-Tupiza	901		98	5,526.04			107,016	88,298	82.5
Tupiza-Villazon	743		47	2,657.72			51,324	34,921	68.0
Villazon-Tupiza	987		47	2,657.72			51,324	46,389	90.4
Tupiza-Uyuni	1,138		98	5,526.04			107,016	111,524	104.2
Uyuni-Oruro	1,774		174	9,529.52			190,008	308,676¾	162.5
Oruro-Cochabamba	1,903		74	4,079.92			80,808	140,822	174.3
La Paz-Oruro	2,262		124	6,713.72			135,408	280,488	207
Oruro-Potosi	1,521		143	7,896.20			156,156	217,503	139.2
Potosi-Sucre	1,207		48	2,892.24			52,416	57,936	110.5
Sucre-Cochabamba	1,058		130	7,029.88			141,960	137,540	96.9
Cochabamba-Sucre	1,036		130	7,029.88			141,960	134,680	94.9
Sucre-Potosi	2,230		48	2,892.24			52,416	107,040	204.2
Potosi-Oruro	4,159		143	7,896.20			156,156	594,737	380.0
Oruro-La Paz	4,489		124	6,713.72			135,408	556,636	411.1
Sta.Cruz-Vallegrande	1,063		78	4,472.52			85,176	82,914	97.3
Vallegrande - Sta.Cruz	1,199		78	4,472.52			85,176	93,444	109.7

[1] Based on DC-3 Total Costs first 8 months 1964 $1,013 per mile, includes 7.00 one landing and one take-off.

[2] 21 Seats on DC-3 Annual.

[3] DC-3

EXHIBIT DF-32

ESTIMATE OF COSTS AND REVENUES FOR POTENTIAL DOMESTIC SEGMENTS

ANNUAL BASIS - ONE WAY

Segment	Estimated No. of Tons of Passengers	Cargo [5]	Segment Distance	Total Operating Cost [8]	Station Cost	Total Cost	Available Seat Miles [2]	Revenue Passenger Miles	Passenger Load Factor	Passenger Revenue	Available Cargo Ton Miles [6]	Cargo Ton Miles [4]	Cargo Revenue [7]	Total Revenues
1. Cochabamba-Oruro	619	200	74	$ 4,079.92			80,808	45,806	56.7	$2,656	14,800	7,622	$2,721	
Oruro-Cochabamba	940	305	74	4,079.92	$1,035	$9,193	80,808	69,560	86.1	4,034	22,570	5,550	1,981	$11,392
Total Costs				8,158						6,690				
2. Cochabamba-Oruro	452	146	74	4,079.92	1,035		80,808	33,448	41.3	1,939	10,804	8,732	3,117	
Oruro-Uyuni	989	321	174	9,529.52	1,765		190,008	172,806	90.5	10,023	55,854	12,180	4,348	
Uyuni-Tupiza	901	292	98	5,526.04	1,765		107,016	88,298	82.5	5,121	28,616	7,840	2,798	
Tupiza-Villazon	743	241	47	2,657.72	1,765	28,121	51,324	34,921	68.0	2,025	11,327	4,183	1,493	$30,864
Total Costs				21,791						19,108				
3. Villazon-Tupiza	987	320	47	2,657.72	1,765		51,324	46,389	90.4	2,690	15,040	3,290	1,174	
Tupiza-Uyuni	1,138	369	98	5,526.04	1,765		107,016	111,524	104.2	6,206	36,162	5,880	2,099	
Uyuni-Oruro	1,774	576	174	9,529.52	1,765		190,008	308,676	162.5	11,020	30,852	11,832	4,224	
Oruro-Cochabamba	963	312	74	4,079.92	1,035	28,121	80,808	71,262	88.2	4,133	23,038	5,180	1,849	$33,395
4. La Paz-Oruro	2,262	734	124	13,427.44	2,070		270,816	280,488	103.6	15,707	91,016	7,440	2,656	
Oruro-Potosi	1,521	493	143	15,792.40			312,312	217,503	69.6	12,615	70,499	12,727	4,543	
Potosi-Sucre	1,207	391	48	5,784.48			104,832	57,936	55.3	3,360	18,768	4,944	1,765	
Sucre-Cochabamba	1,058	343	130	14,059.76		51,132	283,920	137,540	48.4	7,977	44,590	14,690	5,244	$53,867
5. Cochabamba-Sucre	1,036	336	130	14,059.76			283,920	134,680	47.4	7,811	43,680	14,690	5,244	
Sucre-Potosi	2,230	724	48	5,784.48			104,832	107,040	102.1	6,080	34,752	2,880	1,028	
Potosi-Oruro	4,159	1,350	143	15,792.40			312,312	594,737	190.4	18,114	193,050	9,580	3,063	
Oruro-La Paz	4,489	1,457	124	13,427.44	2,070	51,132	270,816	556,636	205.5	15,707	180,668	7,440	2,656	$59,703
6. Sta.Cruz-Vallegrande	1,063	345	78	4,472.52	3,530		85,176	82,914	97.3	4,809	26,910	5,070	1,809	
Vallegrande-Sta.Cruz	1,199	389	78	4,472.52		12,474	85,176	93,444	109.7	4,940	30,342	4,680	1,670	$13,228

Note: Segments 1,2,3,and 6 once a week frequency;segments 4 and 5 twice a week frequencies.

1/ Based on DC-3 Average Costs first 8 months 1964 $1,013 per mile-also includes $7.00 for one landing and one take-off.

2/ 21 Seats Available.

3/ Reduced Account lack of Available space.

4/ Computed on 6,200 lbs. available-Passenger & baggage at 185 lbs - gas at 300 gal = 1300 lbs - assumes no G.W. Restrictions.

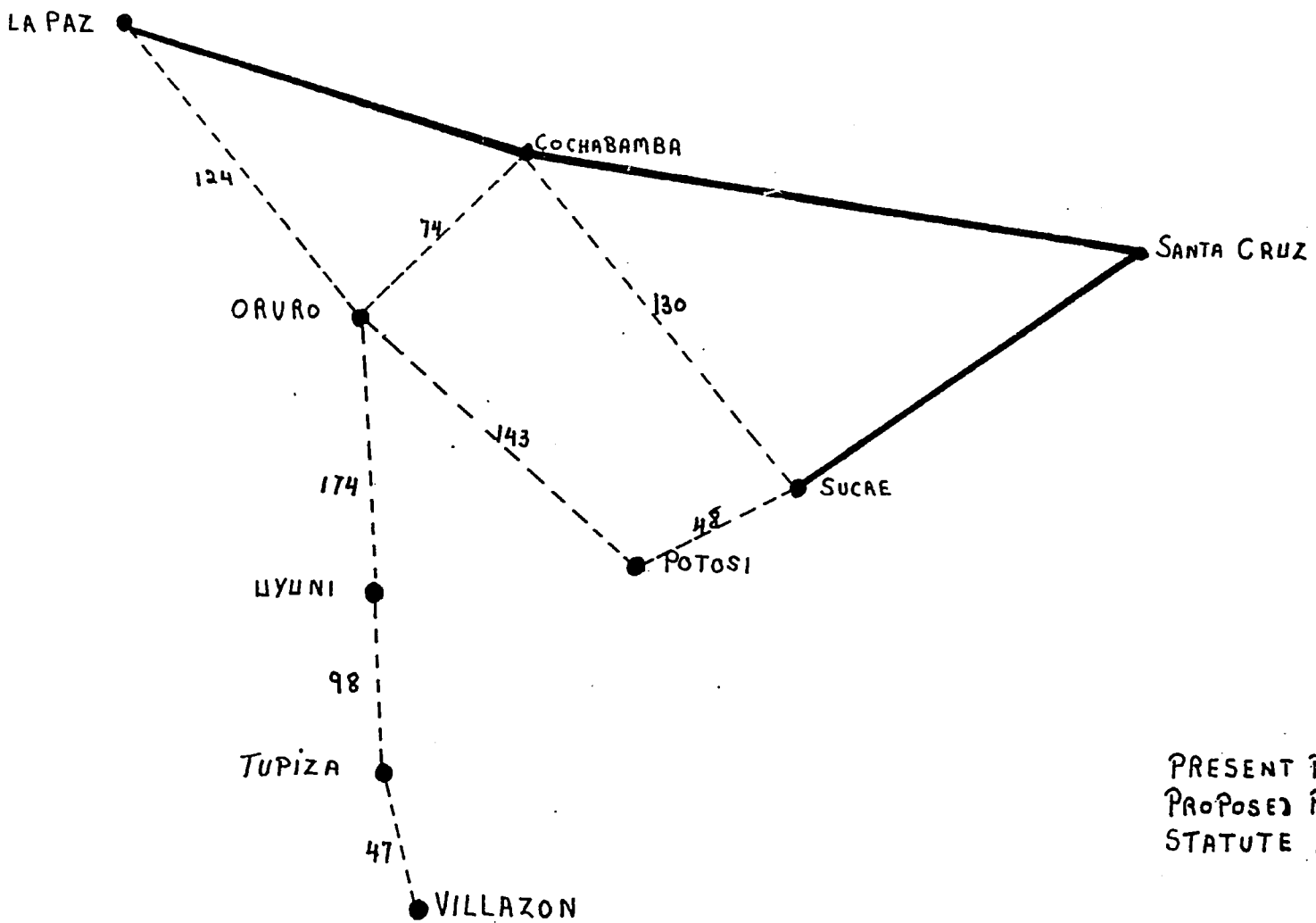
8/ Total operating cost will be reduced approximately 20% due to new gas price.

3/ 5.8¢ per mile yield with basic tariff of 6.5¢p.mile

5/ Not weighed for additional surface diversion in specific markets - Number of passenger x.3247 tons

7/ Using 1st. 8 months 1964 average yield 0.357

9/ Load factors in express of 100% computed as only 100% in RPM's.



PRESENT ROUTES
PROPOSED ROUTES
STATUTE MILES

DF-34

DESCRIPTION OF AIRPORTS NOT PRESENTELY SERVED BY LAB

City	Dimensions[1]
Bermejo	1035 x 100
Culpina	1400 x 100
Challapata	1420 x 50
Charagua	1000 x 80
Lagunilla	1100 x 40
Oruro	2050 x 100
Potosi	2100 x 80
Port Grether	800 x 30
Puerto Heath	
Puerto Villarroel	1000 x 50
San Matias	800 x 30
Tupiza	3000 x 46
Uncia	2200 x 80
Uyuni	2100 x 100
Vallegrande	1140 x 60
Villazon	1100 x 100

[1] In meters.

Source: General Bolivian Registration of Airports, 1959.

EXHIBIT DF-36

ROAD CONDITIONS FOR SELECTED SEGMENTS

YEAR 1963

Segment	Open All Year	Periodically Unusable	Open but difficult
La Paz-Oruro		*	
Oruro-Cochabamba		*	
Oruro-Potosi	*		
Potosi-Sucre		*	
Potosi-Villazon		*	*
Potosi-Tupiza		*	*
Oruro-Uyuni		*	

Note: 1963 generally considered a dry year.

Source: 1963 Records servicio de Caminos.

ANNUAL COST OF STATION OPERATION

	Group "A"	Group "B"
Number of Employees	3	8
Salaries	$3,019	$6,205
Overtime	90	189
Electricity	68	345
Rent	353	504
Total	3,530	7,243

Source: Company Records

PROPOSED TARIFF

(6.5¢ per Mile)

In U.S.$

Route	Miles	Tariff O.W.
La Paz-Oruro	124	8.06
La Paz-Potosi	267	17.36
-Sucre	315	20.47
-Sucre via CBB	234	15.21
-Uyuni	298	19.37
-Tupiza	396	25.74
-Villazon	443	28.79
Cochabamba-Oruro	74	4.81
-Potosi	217	14.10
-Potosi via Sucre	178	11.57
-Sucre	265	17.22
-Sucre via Cochabba	130	8.45
-Uyuni	248	16.12
-Tupiza	346	22.49
-Villazon	393	25.54
Oruro - La Paz	124	8.06
-Cochabamba	74	4.81
-Potosi	143	9.29
-Sucre	191	12.41
-Cochabamba via Sucre	321	20.86
-Uyuni	174	11.31
-Tupiza	272	17.68
-Villazon	319	20.73

Route	Miles	Tariff O.W.
Uyuni-La Paz	298	19.37
-Cochabamba	248	16.12
-Oruro	174	11.31
-Tupiza	98	6.37
-Villazon	145	9.42
-Potosi via Oruro	317	20.60
-Sucre via Oruro	365	23.72
Tupiza-Villazon	47	3.05
Potosi-Sucre	48	3.21

Note: R.T. is on double one way with 10% discount.
Through fares are combination of local fares.

EXHIBIT DF-39

P R O P O S E D S C H E D U L E

La Paz-Oruro-Potosi-Sucre-Cochabamba

08:00	Lv	LP	Ar	13:55
08:30	Ar	OR	Lv	13:25
08:50	Lv		Ar	13:08
09:23	Ar	PO	Lv	12:35
09:30	Lv		Ar	12:28
09:43	Ar	SU	Lv	12:15
09:50	Lv		Ar	12:30
10:25	Ar	CB	Lv	11:30

La Paz-Oruro-Potosi-Sucre-Cochabamba

08:00	Lv	LP	Ar	13:55
08:30	Ar	OR	Lv	13:25
08:50	Lv		Ar	13:08
09:23	Ar	PO	Lv	12:35
09:30	Lv		Ar	12:28
09:43	Ar	SU	Lv	12:15
09:50	Lv		Ar	12:30
10:25	Ar	CB	Lv	11:30

Cochabamba-Oruro-Uyuni-Tupiza-Villazon

08:10	Lv	CB	Ar	13:45
08:35	Ar	OR	Lv	13:20
08:55	Lv		Ar	13:05
09:40	Ar	UY	Lv	12:20
09:50	Lv		Ar	12:10
10:20	Ar	TU	Lv	11:40
10:30	Lv		Ar	11:30
10:35	Ar	VZ	Lv	11:15

Cochabamba-Oruro-Cochabamba

08:10	Lv	CB	Ar	09:20
08:35	Ar	OR	Lv	08:55

Santa Cruz-Vallegrande-Santa Cruz

10:40	Lv	CZ	Ar	11:50
11:05	Ar	VG	Lv	11:25

EXHIBIT DF-40

60 DAY STUDY OF RAILROAD PASSENGER TRAFFIC

MARCH AND JUNE, 1964

Selected Segments

Segment from:	to:	Total Passengers
Villazon	La Paz	449
	Oruro	710
	Potosi	90
	Uyuni	321
	Sucre	1
	Cochabamba	102
Potosi	La Paz	512
	Cochabamba	26
	Oruro	428
	Uyuni	173
	Tupiza	23
	Villazon	51
Oruro	La Paz	982
	Potosi	104
	Tupiza	93
	Villazon	359
	Cochabamba	2,919
Uyuni	Oruro	1,027
	Potosi	345
	La Paz	195
	Cochabamba	19
	Villazon	382
	Tupiza	71

Source: Min. of Economy.

EXHIBIT DF-41

COMPARISON OF PASSENGERS ACTUAL AND PROJECTED USING TELEPHONE-TELEGRAPH MESSAGES

Station	No.of Messages	Potential Pgrs.	1963 Actual
Apolo	24	112	269
Ascension	48	224	593
Camiri	667	3,114	2,432
Cobija	273	1,274	777
Cochabamba	2,458	7,423	19,702
Concepcion	44	205	468
Guayaramerin	381	1,779	3,536
La Paz	4,657	21,748	21,316
Magdalena	39	182	835
Puerto Suarez	260	1,214	377
Reyes	32	149	241
Riberalta	479	2,236	3,735
Robore	156	728	532
San Borja	128	597	346
San Ignacio Velasco	60	280	538
San Jose	47	219	298
San Joaquin	30	140	906
Santa Ana	131	611	1,414
Santa Cruz	3,067	14,322	12,976
Sucre	1,126	5,258	2,516
Tarija	941	4,394	2,420
Todos Santos	25	116	130
Trinidad	582	2,717	6,433
Villamontes	218	1,018	110
Yacuiba	631	2,946	2,365
Total	16,504	73,006	85,265
Totals w/o LP-CB-CZ	6,322	29,513	31,271

Average percentage of error without LP-CB-CZ 15(1758) 5.6%

RESUME OF TOTAL TRAFFIC FROM BOLIVIA TO EXTERIOR CITIES

	Passengers	% of Total	Cargo (Tons)	% of Total
Air[1/]	41,772	5.14%	1,216	1.54%
Rail	771,000		788,000	
Totals	812,772		789,216	

1/ Reported Traffic during first six months, 1964.

Source: DGAC Statistics and Minister of Economy, La Paz.

RESUME OF TRAFFIC TO SELECTED EXTERIOR AREAS

BY RAIL YEAR 1963

From Bolivia to:	No. of Passengers	Tons Cargo
La Paz-Arica	86,000	73,000
La Paz-Villazon(Argen.)	131,000	37,000
Santa Cruz-Yacuiba	202,557	
La Paz-Antofagasta	554,000	678,000

Source: Minister of Economy - La Paz, Bolivia.

COMPARISON OF SYSTEM TRAFFIC INCREASES BY YEAR

	1962 Passengers	1963 Passengers	1964 Passengers	3 Year Decrease
Arica	4,838	2,727	2,437	49.6%

Year	System Passengers 1/	% Increase (Decrease)
1960	184,910	
1961	176,362	(4.6)
1962	166,756	(5.4)
1963	145,636	(12.7)

1/ Including Transits.

Note: This shows Arica decrease greater than system average as result of accident (57.0% from 1963 to 1964).

EXHIBIT IF-4

COUNT OF INTERNATIONAL PASSENGERS AT BOLIVIAN HOTELS

City	60 Day Actual Count	60 Day Estimated Total Registration	Estimated Annual Passengers in Bolivian Hotels
Arequipa,Peru	13	43	258
Antofagasta,Chile	16	34	68
Asuncion,Paraguay	22	37	74
Cuzco, Peru	39	130	780
Santiago,Chile	17	57	342
Montevideo,Uruguay	17	57	114
Mollendo, Peru	2	6	36
Arica,Chile	57	189	1,134

Source: Community of Interest Exhibits

ESTIMATED PASSENGER TRAFFIC AT SELECTED INTERNATIONAL CITIES

City	Estimated 1964 Hotel Count Annual	Estimated 1964 Passenger[1]	Index
Arica	1,134	4,224	3,724
			Estimated Weekly Pgr. Traffic (RT)
Cuzco, Peru	780	2,905	55.9
Santiago, Chile	342	735[2]	24.5
Arequipa, Peru	258	961	18.5
Montevideo, Uruguay	258	961	18.5
Antofagasta, Chile	68	146[2]	48.7
Mollendo, Peru	36	134	25.8
Asuncion, Paraguay	18	67	1.2

[1] 1962 Traffic adjusted for system experience of 12.7% - Decrease used to offset diversion for 1) DC-6B accident and 2) Break in political relations with Chile.

[2] Arica 1964 experience and index of 2.15 used because of factors in footnote [1].

Source: Exhibit IF-4

EXHIBIT IF-6

ESTIMATED STATION EXPENSE AT ADDED INTERNATIONAL CITIES WITH LAB EMPLOYEES

Salaries	$221.oo
Traveling Exp.	253.oo
Office Rent	343.oo
Electricity	57.oo
Other	203.oo
Total	$ 1,077.oo

Note: If commission agent used costs will vary with contract - normally 7% of revenues.

ESTIMATED BOLIVIAN AIR CARGO AT SELECTED INTERNATIONAL CITIES

Market	1964 Air Passengers	1964 Air Cargo(Tons)	Index
Arica-La Paz	2,437	204.2	.837
Cuzco, Peru	1,677	140	
Santiago, Chile	735	61	
Arequipa, Chile	554	46	
Montevideo, Uruguay	554	46	
Antofagasta, Chile	146	12	
Mollendo, Peru	77	6	
Asuncion, Paraguay	39	3	

1/ Includes extra sections and charters.

Source: Exhibit IF-1

ANALYSIS OF ADDED COSTS TO INCLUDE POTENTIAL INTERNATIONAL CITIES

ANTOPAGASTA-CUZCO-AREQUIPA-MONTEVIDEO ROUND TRIPS

Segment	Additional Number of Passengers 1/	Additional Estimated Tons Cargo 2/	Miles of Circuity	Total Operating Cost For Circuity 3/	Added Station Cost	Total Additional Cost	Seat Miles Offered 4/	Revenue Passenger Miles 5/	Passenger Load Factor	Added Revenue Passenger Miles	Added Passenger Revenue 6/	Added Cargo Ton Miles 7/	Added Cargo Revenue	Total Added Revenues	Breakeven Need
1. Arica-Antofagasta	146	12	700	$206,530	$12,924	$219,454	2,402,400	102,200	4.3%	102,200	$ 5,835.00	8,400	$2,998	$8,833	$210,621
2. La Paz-Arequipa-Lima	961	46	0	4,150	992	5,152	5,058,768	1,733,325	34.3%	211,420	$10,571.00	10,120	$3,612	$14,183	
3. La Paz-Cruzco-Lima	2,905	140	86	9,632	1,175	10,807	5,353,920	1,860,530	34.7%	249.830	$12,491	12,040	$4,298	$16,789	

1/ Does not include possible increase in traffic from turn-around city account no cabotaje rights.

2/ Based on .837 tons per passenger.

3/ $2,891 total cost per mile DC-6B and includes $20.00 for one landing and take-off.

4/ Entire segment for La Paz-Lima 737 miles - 66 seats available.

5/ Includes Lima traffic on La Paz-Lima segment 1963 experience 4,131 round trips and assumes no diversion.

6/ Using LAN OW prop $20.00 OR 5.71 ¢ per mile as tariff - La Paz-Arequipa 220 mi - for added revenue LAB experience .05¢ per mile.

7/ At LAB system experience .357 ¢ per ton mile.

EXHIBIT IP-D

60 DAY STUDY OF HOTEL REGISTRATIONS, LA PAZ-BOLIVIA

MARCH AND JUNE, 1964

Rank	City Arrived from:	March	June	Total	% Total Sampled
1.	Cochabamba	202	256	458	28.2%
2.	Other Peru	167	166	333	20.5
3.	Oruro	99	131	230	14.2
4.	Santa Cruz	95	82	177	10.9
5.	Argentina	100	44	144	8.9
6.	Arica	22	35	57	3.5
7.	Potosi	28	25	53	3.3
8.	Cuzco	19	20	39	2.4
9.	Brazil	19	10	29	1.8
10.	Trinidad	9	9	18	1.1
11.	Santiago	8	9	17	1.0
12.	Arequipa	6	7	13	.8
13.	Montevideo	7	6	13	.8
14.	Other Chile	11	-	11	.7
15.	Tupiza	6	3	9	.6
16.	Uyuni	4	4	8	.5
17.	Antofagasta	6	1	7	.4
18.	Villazon	3	4	7	.4
19.	Mollendo	2	-	2	.1
	Total	813	812	1,625	100.0%

Source: Registration cards Hotel records.
Hotels studied: La Paz, Sucre Palace, Copacabana, City Hotel and Gran Hotel. 499 Beds.

60 DAY STUDY

ESTIMATED REGISTRATION OF PASSENGERS

LA PAZ HOTELS

Total Beds available, La Paz hotels.....1,664

Per cent of total surveyed..... 30%

Rank	City	60 Day Actual Count Registrants	Passengers as % of Sampled Capacity	6 Day Estimated Total Registration
1.	Cochabamba	458	91.8%	1,528
2.	Oruro	230	46.1	767
3.	Santa Cruz	177	35.5	591
4.	Arica	57	11.4	189
5.	Potosi	53	10.6	176
6.	Cuzco	39	7.8	130
7.	Trinidad	18	3.6	60
8.	Santiago	17	3.4	57
9.	Arequipa	13	2.6	43
10.	Montevideo	13	2.6	43
11.	Tupiza	9	1.8	29
12.	Uyuni	8	1.6	26
13.	Antofagasta	7	1.4	23
14.	Villazon	7	1.4	23
15.	Mollendo	2	.4	6

Source: Hotel Registrations, La Paz. 499 beds in group sampled.

EXHIBIT CA-2

LA PAZ HOTELS CAPACITY

Hotel	# of Beds	# of Rooms
Crillon	120	70
Copacabana	96	45
Sucre Palace	165	115
La Paz	100	50
Avenida	71	43
Gran Hotel	104	52
Italia	65	31
Neumann	32	18
San Pedro	28	18
City	34	22
Andes	76	35
España	50	26
Austria	50	25
Bulgaro	22	10
Torino	75	40
Plaza	25	12

EXHIBIT CA-4

30 DAY STUDY OF TELEPHONE AND TELEGRAPH MESSAGES

LA PAZ, BOLIVIA

Rank	From La Paz to: Station	No. of Messages
1.	Santa Cruz	777
2.	Cochabamba	774
3.	Sucre	659
4.	Potosi	406
5.	Tarija	327
6.	Trinidad	218
7.	Riberalta	192
8.	Oruro	181
9.	Yacuiba	153
10.	Villazon	122
11.	Cobija	85
12.	Guayaramerin	83
13.	Vallegrande	82
14.	San Borja	72
15.	Camargo	38
16.	Reyes	31
17.	Bermejo	30

Source: Radiocommunications of the State.

EXHIBIT CA-5.

RESUME OF STUDENT REGISTRATIONS

SAN ANDRES UNIVERSITY

LA PAZ, BOLIVIA

1964

Rank	From:	Total Students 1/
1.	La Paz	1,806
2.	Cochabamba	405
3.	Oruro	309
4.	Potosi	272
5.	Sucre	137
6.	Santa Cruz	95
7.	Tarija	69
8.	Peru	65
9.	Tupiza	32
10.	Trinidad	30
11.	Vallegrande	23
12.	Uyuni	15
13.	Brazil	14
14.	Camargo	13
15.	Villamontes	13
16.	Camiri	12
17.	Sorata	12
18.	Llallagua	11
19.	Uncia	11
20.	Cobija	10
21.	Corocoro	10
22.	Villazon	9
23.	Argentina	8
24.	Chile	8
25.	Riberalta	7
26.	Chulumani	6
27.	Apolo	5

1/ Does not include points with less than 5 registrations.

Source: Registration Records - University San Andres.

EXHIBIT CA-6

BANK TRANSFER STUDIES

MAY AND NOVEMBER, 1964

Rank	Between La Paz and: City	May	November	Total
1.	Cochabamba	4,330,956	757,544	5,088,500
2.	Tupiza	1,144,357	976,438	2,120,795
3.	Potosi	713,338	1,025,596	1,738,934
4.	Santa Cruz	878,202	727,492	1,605,694
5.	Trinidad	1,002,053	549,147	1,551,200
6.	Uyuni	463,481	722,436	1,185,917
7.	Oruro	486,496	445,051	931,547
8.	Sucre	573,552	335,440	908,992
9.	Villazon	454,879	232,482	687,361
10.	Yacuiba	222,555	274,879	497,434
11.	Riberalta	211,228	210,695	421,923
12.	Tarija	219,767	186,274	406,041
13.	Cobija	96,512	82,300	178,812

Source: Banco Central - La Paz.

EXHIBIT CA-7

GENERAL VEHICULAR MOVEMENT FROM LA PAZ TO THE INTERIOR AND EXTERIOR OF BOLIVIA

Interior	1958	1959	1960	1961	% Inc.	Growth
Cochabamba	1,250	2,018	2,795	3,668	193.4	2,418
Oruro	3,323	3,245	4,667	5,787	74.1	2,464
Potosi	327	316	278	411	25.6	84
Santa Cruz	964	1,215	1,979	2,085	116.2	1,121
Villamontes	5	9	2	--	--	0
Uncia	25	12	1	5	--	0
Camargo	91	74	16	21	--	0
Villazon	37	40	29	8	--	0
Uyuni	18	30	7	6	--	0
Bermejo	3	2	--	--	--	0
Tupiza	22	27	3	1	--	0
Vallegrande	1	3	3	--	--	0
Exterior						
Lima	3	--	--	--	--	--

Source: Direccion General de Transito.
Min. of Finance "Statistical Bulletin 1963 No.88".

EXHIBIT CA-8

MAIL DISPATCH STUDY

MARCH AND JUNE 1964

LA PAZ-BOLIVIA

Rank	City	No. of Letters
1.	Cochabamba	11,139
2.	Oruro	9,506
3.	Potosi	7,356
4.	Argentina	4,890
5.	Santa Cruz	4,168
6.	Tupiza	2,871
7.	Brazil	2,164
8.	Other Peru	1,936
9.	Villazon	1,305
10.	Uyuni	1,251
11.	Santiago	1,072
12.	Arequipa	637
13.	Mollendo	489
14.	Uncia	476
15.	Antofagasta	296
16.	Apolo	126
17.	Trinidad	472
18.	Rurrenabaque	95
19.	Cuzco	95

Source: Post Office Records, La Paz.

EXHIBIT CA-9

60 DAY STUDY OF RAILROAD PASSENGER TRAFFIC

MARCH AND JUNE, 1964

LA PAZ, BOLIVIA

Between La Paz and:

	March	June	Total
Cochabamba	290	1,257	1,547
Oruro	268	636	904
Potosi	312	274	586
Tupiza	101	143	244
Uyuni	132	108	240
Villazon[1/]	660	585	1,245
Sucre	49	66	115
Total	1,812	3,069	4,881

1/ Includes Atocha.

Source: Minister of Economy.

GENERAL INDEX

COST OF LIVING IN THE CITY OF LA PAZ

(Base Year 1957 = 100)

Month	1963	1964	Differences Absolute	Differences Relative%
January	136.16	145.43	9.27	6.81
February	135.06	146.84	11.78	8.72
March	132.58	145.80	13.22	9.97
April	131.70	146.16	14.46	10.98
May	131.54	145.81	14.27	10.85
June	131.58	146.40	14.82	11.26

Source: "Index of Cost of Living", June 1964, No.31

EXHIBIT CB-1

60 DAY STUDY OF HOTEL REGISTRATIONS

MARCH AND JUNE, 1964

COCHABAMBA, BOLIVIA

Rank	City Arrived from:	March	June	Total	% of Total
1.	La Paz	308	349	657	60.1%
2.	Santa Cruz	93	76	169	15.5
3.	Sucre	44	30	74	6.8
4.	Oruro	33	40	73	6.7
5.	Trinidad	18	11	29	2.7
6.	Camiri	20	8	28	2.6
7.	Tarija	8	11	19	1.7
8.	Argentine	3	8	11	1.0
9.	Montevideo	6	3	9	.8
10.	Uncia	4	2	6	.5
11.	Other Brazil	3	3	6	.5
12.	Asuncion	1	1	2	.2
13.	Vallegrande	3	-	3	.2
14.	Potosi	2	1	3	.2
	Total	549	544	1,093	

Note: Hotels sampled: Cochabamba, Colon, Bolivar, Panamericano ahd Capitol.

ESTIMATED REGISTRATION OF PASSENGERS

COCHABAMBA HOTELS

Total Beds available in city..... 696
Per cent of total surveyed..... 499-71.6%

Rank	City	60 Day Actual Count of Registrants	Passengers as % of total Sampled	Estimated 60 Day Total Registration
1.	La Paz	657	131.6%	915
2.	Santa Cruz	169	33.9	236
3.	Sucre	74	14.8	103
4.	Oruro	73	14.6	102
5.	Trinidad	29	5.8	40
6.	Camiri	28	5.6	39
7.	Tarija	19	3.8	26
8.	Argentine	11	2.2	15
9.	Montevideo	9	1.8	13
10.	Uncia	6	1.2	8
11.	Asuncion	2	.4	3
12.	Vallegrande	3	.6	4
13.	Potosi	3	.6	4

Note: Hotels sampled: Cochabamba, Boston, Colon, Capitol, Pan Americano, Bolivar. 490 Bed Capacity.

Source: Hotel Registration Records.

EXHIBIT CB-3

30 DAY STUDY

TELEPHONE & TELEGRAPH MESSAGES TRANSMITTED

COCHABAMBA, BOLIVIA

Between Cochabamba and:

City	Number
La Paz	908
Santa Cruz	396
Oruro	205
Sucre	198
Trinidad	89
Tarija	86
Potosi	83
Yacuiba	59
Riberalta	55
Villazon	53
Camiri	46
	2,178

Source: Minister of Communications.

RESUME OF STUDENT REGISTRATIONS

SAN SIMON UNIVERSITY

COCHABAMBA-BOLIVIA

Rank	Province	No. of Students	% of Total
1.	Cochabamba	1,258	69.5%
2.	Cruro	192	10.6
3.	La Paz	91	5.0
4.	Potosi	67	3.6
5.	Chuquisaca	48	2.7
6.	Santa Cruz	41	2.3
7.	Tarija	11	.6
8.	Foreign countries	19	1.0
9.	Provisional	84	4.6
	Total	1,811	100.0%

Source: University records.

60 DAY STUDY OF VEHICULAR MOVEMENTS

COCHABAMBA-BOLIVIA

MARCH AND JUNE, 1964

Between Cochabamba and:	March			June			Total Vehicles 2 Months	Total Vehicles For Year
	Trucks	Bus	Autos	Trucks	Bus	Autos		
La Paz	210	210	32	75	106	35	668	4,008
Santa Cruz	180	140	26	189	20	15	570	3,420
Trinidad								
Tarija	30		4	4			38	228
Oruro	225	125	59	64	35	6	514	3,084
Sucre	110	45	21	51	5	3	235	1,410
Rtosi	40		5	5	3		53	318
Camiri	12			4			16	96
Bermejo				1			1	6

Source: Transito Records, Cochabamba.

EXHIBIT CB-6

EXHIBIT CB-7

SURFACE MAIL DISPATCH STUDY

MARCH AND JUNE, 1964

COCHABAMBA-BOLIVIA

(In Kilos)

Rank	Between Cochabamba and:	March	June	Total Kilos	% of Total
1.	Santa Cruz	1,590	1,327	2,917	32.6%
2.	La Paz	759	1,050	1,809	20.2
3.	Buenos Aires	760	180	940	10.5
4.	Oruro	342	396	738	8.3
5.	Potosi	324	270	594	6.6
6.	Sucre	234	234	468	5.2
7.	Villazon	198	198	396	4.4
8.	Vallegrande	180	180	360	4.0
9.	Tarija	144	167	311	3.5
10.	Tupiza	82	101	183	2.0
11.	Uyuni	60	60	120	1.3
12.	Antofagasta	54	50	104	1.2
				8,940	

Note: Does not include air mail.

60 DAY STUDY OF RAIL PASSENGER TRAFFIC

MARCH AND JUNE, 1964

COCHABAMBA, BOLIVIA

Between Cochabamba and:	March	June	Total
La Paz	200	1,465	1,665
Oruro	1,088	2,037	3,125
Uyuni	23	7	30
Villazon[1/]	181	86	267
Potosi	22	11	33
Sucre	2	--	2
Tupiza	24	18	42
Total	1,540	3,624	5,164

1/ Includes Atocha.

Source: Min. of Economy.

TRUCK FREIGHT RATES

COCHABAMBA - SANTA CRUZ

PER 100 POUNDS

	Tariff	
Company	June thru October	November thru May
Hansa Limitada	4,000 B's	6,000 B's
Mc Donald & Company	4,500	6,000
Grace and Company	4,000	6,000
Food Stuffs all companies	3,500 B's	3,500 B's

SANTA CRUZ - COCHABAMBA

Company	June thru October	November thru May
Hansa Limitada	8,000 B's	10,000 B's
McDonald & Company	8,000	10,000
Grace and Company	8,000	10,000

Source: Department of Commercial Development, LAB.

EXHIBIT CC-1

STUDY OF HOTEL REGISTRATIONS

SANTA CRUZ - BOLIVIA

MARCH AND JUNE, 1964

Rank	Between Santa Cruz and: City	March	June	Total	% of Total
1.	Cochabamba	187	159	346	44.2
2.	Brazil	67	47	114	14.5
3.	Argentine	23	70	93	11.8
4.	Camiri	28	37	65	8.3
5.	Sucre	30	31	61	7.8
6.	Asuncion	9	11	20	2.5
7.	Caranda	12	6	18	2.3
8.	Peru	3	11	14	1.7
9.	Yacuiba	3	11	14	1.7
10.	Trinidad	8	6	14	1.7
11.	Tarija	3	10	13	1.6
12.	Montevideo	6	2	8	1.0
13.	Arica	1	-	1	.1
14.	Tupiza	-	1	1	.1
	Totals	380	402	782	100.0%

Note: Hotels studied: Plaza, Santa Cruz, Guarani, Colonial, Saudia, Drive in Motel. Total Capacity: 151.

Source: Hotel Registers.

EXHIBIT CC-2

ESTIMATED REGISTRATION OF PASSENGERS

SANTA CRUZ, BOLIVIA

Total Beds Available 257
Percentage of Total Surveyed 58.7%

Rank	City	60 Day Actual Count Registrants	Passengers as % of Sampled Capacity	60 Day Estimated Total Registrations
1.	Cochabamba	346	229.1	588
2.	Brazil	114	75.5	194
3.	Argentina	93	61.6	158
4.	Camiri	65	43.0	110
5.	Sucre	61	40.4	103
6.	Asuncion	20	13.2	34
7.	Caranda	18	11.9	31
8.	Peru	14	9.3	23
9.	Yacuiba	14	9.3	23
10.	Trinidad	14	9.3	23
11.	Tarija	13	8.6	22
12.	Montevideo	8	5.3	14
13.	Arica	1	.7	2
14.	Tupiza	1	.7	2

Source: Exhibits

EXHIBIT CC-3

SANTA CRUZ HOTELS

NUMBER OF BEDS

Hotel Santa Cruz	40 Beds
Hotel Plaz	40 "
Hotel Brasilia	19 "
Motel Drive in	18 "
Hotel Riviera	20 "
Hotel Guarani	33 "
Hotel Colonial	20 "
Hotel Londres	58 "
Hotel America	9 "
Total	257 Beds

Total Sampled 151 or 58%.

EXHIBIT CC-4

30 DAY STUDY

TELEPHONE & TELEGRAPH MESSAGES TRANSMITTED

SANTA CRUZ, BOLIVIA

Between Santa Cruz and:

City	Number
La Paz	1,378
Cochabamba	567
Sucre	180
Camiri	157
Yacuiba	102
Oruro	83
Trinidad	74
Puerto Suarez	71
San Ignacio de Velasco	46
Tarija	43
Potosi	42
Total	2,743

Source: Min. of Communications.

EXHIBIT C2-5

RESUME OF STUDENT REGISTRATIONS

UNIVERSITY GABRIEL RENE MORENO

Santa Cruz, Bolivia; Year 1964

Rank	City	Number
1.	Santa Cruz	94
2.	Vallegrande	53
3.	Montero	37
4.	Riberalta	34
5.	Trinidad	33
6.	La Paz	22
7.	Cochabamba	[illegible]
8.	Samaipata	16
9.	Sucre	14
10.	Portachuelo	10
11.	Tarija	10
12.	Oruro	9
13.	Potosi	9
14.	Concepcion	9
15.	Beni	8
16.	San Ignacio Velasco	8
17.	Magdalena	8
18.	Warnes	5
19.	Argentine	4
20.	Robore	3
21.	Puerto Suarez	3
22.	Pando	2
23.	Cobija	2
24.	Villamontes	2
25.	S.Ignacio Moxos	2
26.	Yacuiba	2
27.	Peru	2
28.	Tarija	1
29.	Aiquile	1
30.	Padilla	1
31.	Pampa Grande	1
32.	Uyuni	1
33.	Camiri	1
34.	Guayaramerin	1
35.	Porto Belho	1
36.	Chile	1
37.	San Jose	1
38.	Choreti	1
39.	Comarapa	1

60 DAY STUDY OF BANK TRANSFERS

BANCO CENTRAL - SANTA CRUZ, BOLIVIA

MARCH & JUNE, 1964

Rank	Between Santa Cruz and: City	March Outbound	March Inbound	March Total	June Outbound	June Inbound	June Total	Grand Total
1.	La Paz	4,509,590	240,411	4,750,001	3,106,615	3,100,800	6,207,415	10,957,416
2.	Cochabamba	535,356	542,591	1,177,947	182,269	536,115	718,384	1,896,331
3.	Puerto Suarez	926,070	1,181	927,251	79,108	10,761	89,869	1,017,120
4.	Tarija	15,524	--	15,524	16,384	160,015	176,399	191,923
5.	Sucre	70,997	--	70,997	48,529	60,133	108,662	179.659
6.	Oruro	46,705	13,431	60,136	35,963	74,473	110,436	170,572
7.	Yacuiba	11,512	--	11,512	3,626	104,502	108,128	119,640
8.	Potosi	655	4,735	5,390	10,929	79,413	90,342	95,732
9.	Trinidad	20,004	--	20,004	46,686	23,281	69,967	89,971
10.	Robore	30,626	14,884	45,510	5,356	36,688	42,044	87,554
11.	Camiri	--	--	--	--	56,472	56,472	56,472
12.	Riberalta	580	11,794	12,374	300	33,606	33,906	46,280
13.	Cobija	--	4,514	4,514	40,590	500	41,090	45,604
14.	Vallegrande	3,638	--	3,638	9,946	10,405	20,351	23,989
15.	Villazon	20,810	--	20,810	--	--	--	20,810
16.	Guayaramerin	2,300	5,561	7,861	400	1,100	1,500	9,361
17.	Uyuni	--	--	--	1,500	--	1,500	1,500
18.	Tupiza	100	--	100	420	200	620	720

E IBT CC-6

EXHIBIT CC-7

60 DAY STUDY OF VEHICULAR MOVEMENT

SANTA CRUZ, BOLIVIA

MARCH AND JUNE 1964

Between Santa Cruz and:

City	Trucks	Bus	Autos	Total Vehicles For 2 Mo.	Total Vehicles For Year
Cochabamba	1,128	80	31	1,239	7,434
Camiri	3	1	--	4	24
Vallegrande	22	9	2	33	198
Lagunillas	1			1	6
Sucre	82	2	1	85	510
Potosi	76	-	1	77	462
Total	1,312	92	35	1,439	8,634

Source: Transito Records, Santa Cruz.

EXHIBIT CC-8

TOTAL MAIL MOVEMENT FROM STA. CRUZ, BOLIVIA

MARCH, 1964

Santa Cruz to:	Number of Pieces
La Paz	9,619
Cochabamba	3,565
San Jose	580
Yacuiba	493
Concepcion	8
Tarija	355
Puerto Suarez	840
Robore	1,874
Riberalta	589
Trinidad	496
Potosi	361
Sucre	876
Buenavista	13
Camiri	399
San Ignacio	413
San Javier	97
Guayaramerin	380
Vallegrande	240
Villamontes	195
Oruro	282
Cobija	275
Santa Ana	530
San Ignacio Marban	286
Ascension	75
International Mail	
Brazil	2,977
Argentina	130
Peru	634
Chile	249
Paraguay	119
Uruguay	42

EXHIBIT CC-9

RAIL STUDY - SANTA CRUZ

MONTH OF OCTOBER, 1964

SANTA CRUZ-ARGENTINE RAILROAD

Rank		Total Passengers	First Class	Second Class
1.	Abapo	256	42	214
2.	Yacuiba	135	8	127
3.	Boyuibe	81	--	81
4.	Basilio	78	2	48
5.	Totaicito	53	5	48
6.	Charagua	45	1	44
7.	Villamontes	42	1	41
8.	Curichi	40	6	34
9.	Ing. Mora	32	6	26
10.	Cabezar	29	4	25
11.	Tarenda	23	-	23
12.	Z. Honda	24	2	22
13.	El Palmar	14	-	14
14.	Chore Chore	5	-	5

Source: Ticket Agent Report - Commission Mixto Argentine-Bolivian Yacuiba-Santa Cruz Railroad.

EXHIBIT CC-10

DISTRIBUTION OF SUGAR AND ALCOHOL

"LA BELGICA"

SANTA CRUZ, BOLIVIA

Rank	City	% of Total Sugar	Q.Q. Sugar (Mo.)	Liters Alcohol (Annual)
1.	La Paz	31.6	21,000	12,714,140
2.	Cochabamba	24.1	16,000	9,696,543
3.	Oruro	12.0	8,000	4,828,154
4.	Santa Cruz	7.5	5,000	3,017,597
5.	Villamontes	6.0	4,000	2,414,077
6.	Villazon	4.5	3,000	1,810,557
7.	Sucre	3.8	2,500	1,528,916
8.	Potosi	3.0	2,000	1,207,039
9.	Riberalta	3.0	2,000	1,207,039
10.	Yacuiba	2.3	1,500	925,396
11.	Vallegrande	1.1	700	442,580
12.	Tupiza	.3	200	120,703
13.	Trinidad	.3	200	80,469
14.	Camiri	.3	200	120,703
15.	Atolica	.2	150	80,469
	Total	100.0	66,450	40,194,382

Source: La Belgica shipping records.

EXHIBIT CC-11

CARGO MOVEMENT: NOVEMBER 1961 - OCTOBER 1962

(Tons)

Between Santa Cruz and:	Sugar	Rice	Corn	Lumber	Fruit	Others[1]	Total
La Paz	963	2,088	2,502	3,393	459	1,431	10,836
Cochabamba	25,230	2,430	3,430	5,340	990	930	38,350
Oruro	328	264	256	536	120	1,112	2,616
Sucre	1,162	525	406	63	273	21	2,450
Potosi	805	63	35	7	56	27	993
Total	28,488	5,370	6,629	9,339	1,898	3,521	55,245

1/ Derivatives of sugar cane.

Source: Planeamiento, September 1963.

VEHICULAR TRAFFIC COCHABAMBA - SANTA CRUZ

SANTA CRUZ - COCHABAMBA

Year	West Bound	East Bound	Total
1953	2,869	3,058	5,927
1962	11,901	11,901	23,802
9 year increase	17,875	305%	

EXHIBIT CD-1

60 DAY STUDY OF HOTEL REGISTRATIONS

MARCH AND JUNE, 1964

ORURO, BOLIVIA

Rank	City Arrived from:	March	June	Total	% of Total
1.	La Paz	551	432	983	76.1%
2.	Cochabamba	121	73	194	15.0
3.	Potosi	26	22	48	3.7
4.	Sucre	14	6	20	1.5
5.	Uyuni	5	8	13	1.0
6.	Santa Cruz	5	5	10	.8
7.	Antofagasta	6	3	9	.7
8.	Tupiza	2	3	5	.4
9.	Villazon	3	2	5	.4
10.	Uncia	4	-	4	.3
Total		737	554	1,291	100.0%

Note: Hotel sampled: Hotel Repostero, Hotel Prefectural, Hotel Hispano-Americano.
Total capacity 153.

EXHIBIT CD-2

ESTIMATED TOTAL REGISTRATION

ORURO HOTELS

Total beds available	183
Percentage of total surveyed	84%

Rank	City	60 Day Actual Count of Registrations	Passengers as % of Total Sampled	Estimated 60 Day Registration
1.	La Paz	983	642.5%	1,757
2.	Cochabamba	194	126.8	232
3.	Potosi	48	31.3	57
4.	Sucre	20	13.1	24
5.	Uyuni	13	8.5	15
6.	Santa Cruz	10	6.5	12
7.	Antofagasta	9	5.9	11
8.	Tupiza	5	3.3	6
9.	Villazon	5	3.3	6
10.	Uncia	4	2.6	5

Source: Hotel registers - Total Capacity hotels surveyed 153

EXHIBIT CD-3

30 DAY STUDY OF RADIO MESSAGES - 1962

From Oruro to:

Rank	Station	1962 Messages
1.	Cochabamba	256
2.	La Paz	249
3.	Sucre	135
4.	Potosi	80
5.	Santa Cruz	58
6.	Tarija	41
7.	Villazon	33
8.	Uyuni	13
9.	Yacuiba	13
10.	Tupiza	10
	Total	896

Source: Radiocommunications of the State Statistics.

EXHIBIT CD-4

60 DAY STUDY

RAIL PASSENGER TRAFFIC

MARCH AND JUNE, 1964

ORURO, BOLIVIA

Between Oruro and:

Rank	City	Total Passengers
1.	Cochabamba	2,919
2.	La Paz	982
3.	Villazon	359
4.	Potosi	104
5.	Tupiza	93

Source: Minister of Economy.

EXHIBIT CE-1

60 DAY HOTEL STUDY

MARCH AND JUNE, 1964

POTOSI, BOLIVIA

Between Potosi and:

Rank	City	March	June	Total
1.	La Paz	79	151	230
2.	Sucre	45	39	84
3.	Oruro	27	48	75
4.	Cochabamba	21	32	53
5.	Villazon	28	19	47
6.	Tarija	24	15	39
7.	Camargo	17	11	28
8.	Tupiza	21	7	28
9.	Santa Cruz	5	4	9
10.	Uyuni	5	-	5

Source: Hotel Registers - Hotels Sampled: El Turista, Central and Royal.

EXHIBIT CE-2

30 DAY STUDY TELEPHONE AND TELEGRAPH MESSAGES TRANSMITTED

POTOSI, BOLIVIA

Between Potosi and:

City	Number	%of Total
La Paz	586	64.9
Cochabamba	105	11.6
Oruro	98	10.9
Tarija	27	2.9
Santa Cruz	24	2.7
Villazon	22	2.4
Camargo	13	1.4
Tupiza	13	1.4
Uyuni	8	.8
Camiri	7	.8
Total	903	

Source: Min. of Communications.

EXHIBIT CE-3

60 DAY STUDY OF TRANSITO PERMITS

MARCH AND JUNE, 1964

POTOSI, BOLIVIA

Between Potosi and:

Rank	City	March			June			Total
		Trucks	Bus	Autos	Trucks	Bus	Autos	
1.	Sucre	100	2	16	98	2	18	236
2.	La Paz	86	2	11	102	3	24	228
3.	Oruro	14	32	5	26	36	12	125
4.	Tarija	29	4	-	30	4	2	69
5.	Cochabamba	4	1	1	7	-	19	32
6.	Bermejo	4	2	-	8	3	1	18
7.	Villazon	6	-	-	8	-	4	18
8.	Santa Cruz	7	-	-	6	-	4	17
9.	Tupiza	5	-	1	6	-	2	14
10.	Uyuni	-	-	-	1	-	1	2
11.	Uncia	-	-	-	1	-	-	1
	Totals	255	43	34	293	48	87	760

Source: Transito Records - Potosi.

EXHIBIT CE-4

60 DAY STUDY

RAIL PASSENGER TRAFFIC

MARCH AND JUNE, 1965

POTOSI, BOLIVIA

Between Potosi and:

Rank	City	Total Passengers
1.	La Paz	512
2.	Oruro	428
3.	Uyuni	173
4.	Villazon	51
5.	Cochabamba	26
6.	Tupiza	23

Source: Min. of Economy.

EXHIBIT CF-1

60 DAY STUDY OF HOTEL REGISTRATIONS

MARCH AND JUNE, 1964

SUCRE, BOLIVIA

Rank	City	March	June	Total
1.	La Paz	49	42	91
2.	Potosi	38	27	65
3.	Cochabamba	25	32	57
4.	Santa Cruz	5	24	29
5.	Oruro	2	6	8
6.	Tarija	3	4	7
7.	Vallegrande	-	1	1

Source: Hotel Registers - Hotels sampled: Hotel Londres, Hotel Paris.

EXHIBIT CF-2

30 DAY STUDY

TELEPHONE AND TELEGRAPH MESSAGES TRANSMITTED

SUCRE, BOLIVIA

Between Sucre and:

City	Number
La Paz	465
Cochabamba	146
Potosi	116
Santa Cruz	99
Oruro	75
Camiri	46
Tarija	45
Yacuiba	25
Camargo	18
Huacareta	14
Padilla	14
Total	1,063

Source: Min. of Communications.

EXHIBIT CF-3

60 DAY STUDY TRANSITO PERMITS

MARCH AND JUNE, 1964

SUCRE, BOLIVIA

Between Sucre and:

City	Trucks	Bus	Autos	Total
La Paz	61	6	96	152
Cochabamba	204	167	60	431
Santa Cruz	82	10	30	122
Potosi	78	1	8	87
Tupiza	23	-	8	37
Villazon	100	-	14	114
Bermejo	26	-	-	26
Oruro	65	-	16	81
Totals	839	184	232	1,050

EXHIBIT CF-4

SUMMARY OF REGISTRANTS

HOSPITAL "MANICOMIO NACIONAL"

SUCRE, BOLIVIA

Rank	Department	Number
1.	Potosi	40
2.	Santa Cruz	32
3.	Chuquisaca	26
4.	Cochabamba	21
5.	La Paz	15
6.	Oruro	11
7.	Tarija	6
8.	Beni	1

Source: Hospital Records.